

Blockchain & Crypto - Updates and Future Directions for the Profession

Sean Stein Smith

October 15, 2021



The Association of
Accountants and
Financial Professionals
in Business

Webinar Features and CPE Credit

Q&A

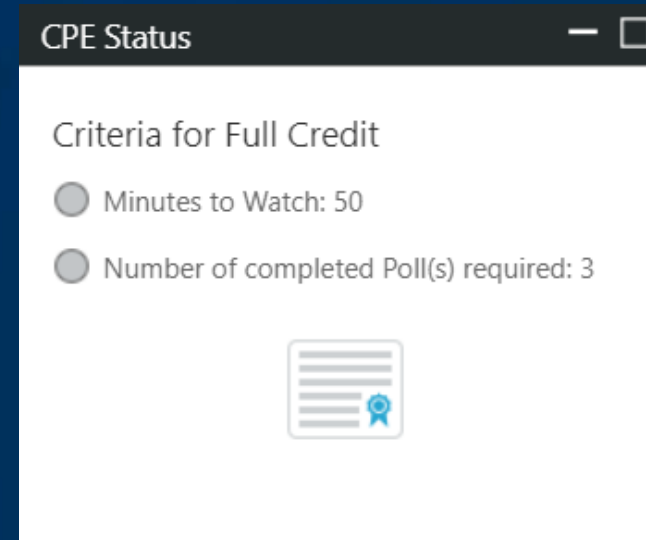
Asking Questions



Help



CPE Credit



The Association of
Accountants and
Financial Professionals
in Business

Moderator

Jodi L. Ryan, CAE
Director, Member Engagement
IMA



The Association of
Accountants and
Financial Professionals
in Business

Featured Presenter

Sean Stein Smith, CMA, CPA, CFE, CGMA
Assistant Professor
City University of New York– Lehman College



The Association of
Accountants and
Financial Professionals
in Business

Sean Stein Smith's Biography

- Sean is a professor at the City University of New York – Lehman College. He serves on the Advisory Board of the Wall Street Blockchain Alliance, where he chairs the Accounting Work Group.
- Sean sits on the Advisory Board of Gilded, a TechStars '19 company and AICPA-CPA.com startup accelerator participant and serves as a Strategic Advisor to the Central Bank Digital Currency Think Tank. His award-winning research and thought leadership have been recognized and honored by the AICPA, AAA, NJCPA, NYSSCPA, IMA, and CPA Practice Advisor as a thought leader in the profession, with a focus on emerging technologies and innovative thinking.
- Sean is the immediate past chairperson of the NJCPA's Emerging Technologies Interest Group (#NJCPATech), where he hosts the NJCPA Tech-Talk Podcast, and is the President-Elect of the NYSSCPA Manhattan-Bronx Chapter. He has also served as a Visiting Research Fellow at the American Institute for Economic Research.

Learning Objectives

1. Identify emerging trends and topics in the blockchain and cryptoasset space.
2. Discuss how regulatory updates, from the IRS and other regulators, are influencing the development of blockchain and cryptoassets.
3. Explain how an organization can develop and implement a crypto-based payment system.
4. Recognize how emerging cryptoasset applications, such as DeFi and NFTs, operate and are different from crypto such as Bitcoin.

Agenda



Market Update



Blockchain Basics



Crypto Basics



Instructor Resources

Market Update



Active Regulators



- Many opinions and perspectives on bitcoin and crypto for financial institutions
- New SEC chairperson Gary Gensler *is* a crypto expert – does not necessarily mean he is always going to innovate
- Janet Yellen not a fan of crypto or bitcoin
- Trade associations very active
- Infrastructure bill with crypto language embedded within it



Poll Question 1:

What is your familiarity with blockchain and cryptoasset technology?

- a. Beginner
- b. Intermediate
- c. Advanced, but not yet implemented
- d. We have implemented blockchain within our firm

Poll Question 1 Results: (Placeholder)

Coinbase in hot water?

- Received a Wells Notice in early September 2021
- A Wells Notice is a notification issued by regulators to inform individuals or companies of completed investigations where infractions have been discovered. It usually takes the form of a letter, which notifies recipients both of the broad nature of the violations uncovered as well as the nature of the enforcement proceedings to be initiated against the recipient
- <https://www.investopedia.com/terms/w/wellsnotice.asp>

Coinbase, cont.

- Sued the organization based on the plan to launch crypto lending program
- Follows other trend of states suing BlockFi for security-like products
- Interest bearing accounts
- <https://www.reuters.com/technology/sec-threatens-sue-coinbase-over-crypto-lending-programme-2021-09-08/>



Regulatory update – Infrastructure Bill

July 28th – language related to crypto reporting and taxation was made public

Since then, fierce debate over the language related to what constitutes a broker in crypto parlance

But what does this mean?

Why do you care?

Crypto- Infrastructure, Implications

- Virtually any organization or entity that receives consideration (payment) for processing or validating crypto transactions is a broker
- Must report customer and transactional data to the IRS
 - Potentially other regulators as well
- Impact on financial institutions
 - Good/bad

August 9th Vote

- Morning – continuing debate on revised language
- Afternoon – compromise reached between a group of 6-8 senators
 - Optimistic chances for passing
 - Needed a clean approval, i.e., no challenges or additional amendments
- Later afternoon – amendment failed
 - Senator Shelby (R – Alabama) proposed additional amendment
 - Led revised amendment to fail
 - Original language still included
- Moved to the House of Representatives

Crypto-Infrastructure, Implications

- Incumbent financial institutions already have robust reporting and compliance operations in any event
- Primary impact would be on
 - 1) New entrants to the blockchain/crypto sector
 - 2) Institutions just trying to enter the space
- Will this impact you?
- Depends on how language is actually written and interpreted

SEC Enforcement – Decentralized Finance (DeFi)

- New SEC Chairperson – Gary Gensler
 - Former head of CFTC and MIT professor (technology focused)
- Agency recently filed first case against a DeFi exchange
- The SEC said Friday it had charged two Florida men, Gregory Keough and Derek Acree, and their company, Blockchain Credit Partners, with making materially false and misleading statements in selling more than \$30 million of unregistered securities using smart contracts, which are digital consent agreements, and DeFi technology.
- <https://www.wsj.com/articles/sec-brings-and-settles-first-case-in-crypto-linked-defi-sector-11628266336>

Crypto hack – August 2021

- Over \$600 million stolen in Poly hack
- Spans multiple blockchains, exchanges, and financial institutions
- Operates in the decentralized finance (DeFi) space
- <https://www.reuters.com/technology/defi-platform-poly-network-reports-hacking-losses-estimated-600-million-2021-08-11/>

Technology

Crypto platform Poly Network hacked in estimated \$600 mln cyberheist

Alun John, Tom Westbrook, Tom Wilson



Crypto hack – the plot thickens

- Most funds were eventually returned.
- <https://www.reuters.com/technology/over-half-crypto-tokens-stolen-610-mln-hack-now-returned-poly-network-says-2021-08-12/#:~:text=Poly%20Network%2C%20a%20platform%20that,are%20still%20outstanding%2C%20it%20said>

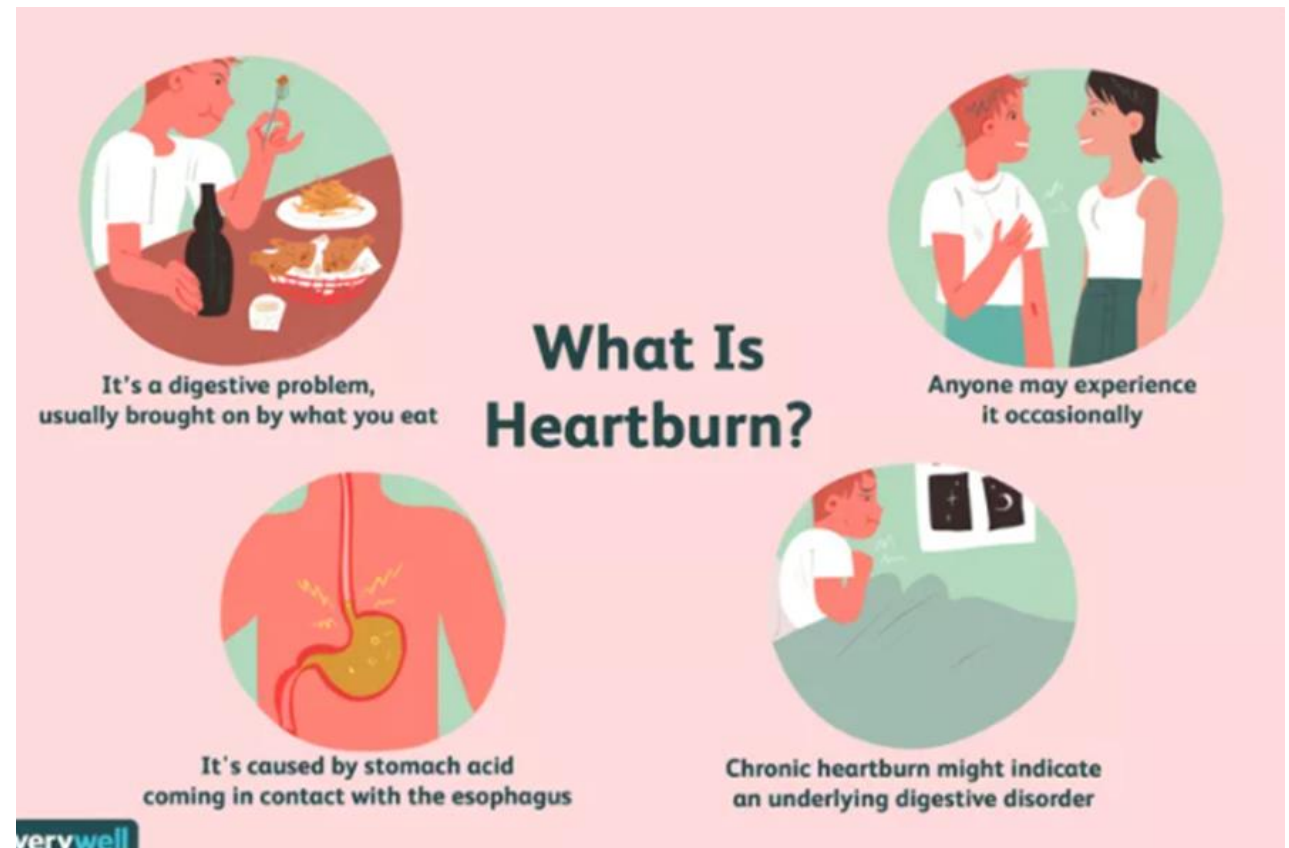
Technology

Over half of crypto tokens stolen in \$610 mln hack now returned, Poly Network says

Tom Wilson

Phew...

Something you might be thinking is...



Nation-states adopting bitcoin/crypto

- El Salvador takes the lead
- Officially recognized bitcoin as legal tender starting on September 7th ,2021
- <https://www.reuters.com/business/finance/el-salvador-leads-world-into-cryptocurrency-bitcoin-legal-tender-2021-09-07/>



Poll Question 2:

What is the best term to classify the current U.S. regulatory landscape toward cryptoassets?

- a. Welcoming and “hands-off”
- b. Focused exclusively on unethical actors
- c. Openly cracking down on cryptoassets
- d. Too soon to say

Poll Question 2 Results: (Placeholder)

Brazil & Crypto

Bank of Brazil Becomes the First State-Backed Bank to Allow Customers Exposure to a Crypto ETF



- First state banked back to do so!
- <https://news.bitcoin.com/bank-of-brazil-becomes-the-first-state-backed-bank-to-allow-customers-exposure-to-a-crypto-etf/>

Brazil Politicians & Crypto

Earlier today, the crypto community had turned their attention to Brazilian politician, Fábio Ostermann, who similarly posted a picture of himself with laser eyes accompanied by the hashtag “#lasereyestill100k.”



- Following a trend of Paraguay, Panama, El Salvador, Brazilian lawmakers are becoming pro-crypto
- “laser eyes“
- <https://cointelegraph.com/news/latin-lawmakers-don-lazer-eyes-on-twitter-in-support-of-bitcoin>

Financial institutions offering crypto services

- BNY Mellon
- Fidelity
- JP Morgan
- Citi Wells Fargo
- PNC
- Fifth Third Bank
- Simple Bank
- Wells Fargo
- US Bancorp
- Signature Bank
- Goldman Sachs
- Ally
- Silvergate Bank

Digital Asset Banking Institutions

- Anchorage – developed specifically for institutions to adopt crypto
- <https://www.anchorage.com/>
- Avanti – headed by Caitlin Long and based out of Wyoming
- <https://avantibank.com/>
- Two nationally chartered digital asset financial institutions in the United States (OCC approved)

What types of services are being offered?

- Crypto products and services for investment purposes
- Crypto custodial products and services
- Direct investment in crypto firms and products
- Actively engaged in processing crypto transactions
 - Stablecoins primarily for now
 - (more on them later)
- Partnerships with crypto native organizations

Blockchain Breakdown

The blockchain problem

There are over 10,000 cryptocurrencies

Hundreds of different blockchain options

Thousands of developers

How many of us feel confident describing or recommending what type of blockchain to implement?

Public blockchain

A decentralized and distributed ledger of encrypted information

Comprised of nodes (network members)

- Not every node is a full node
- Think of it like “read” or “read/edit” ability

Usually uses the Proof of Work consensus methodology

- A race to complete a puzzle
- To earn coins or other rewards

Most secure but also most complex

Business applications



Not terribly realistic to use for business



1) Consumers too much power



2) Technical complexity



3) Easier ways to establish and maintain other models of blockchain

Private blockchain

A hybrid approach between current database or ERP solutions and a public blockchain

Usually managed by one firm, called the “organizing” firm

Can use other types of consensus methodologies

- Proof of Stake
- Proof of Elapsed Time

May not be as secure, but less energy intensive to operate

Initial place where enterprise applications began

Business applications

This is where the development of enterprise or corporate blockchains start being implemented and developed

1) Simpler to control

2) Less power and energy intensive

3) Easier to establish access and control issues

Public- permissioned



A crossover between fully public and fully private blockchains



Allows almost anyone access to read or track transactions on the chain



Requires special permissions or access to edit or add data to the platform



Think of this like
Google

Anyone can search

But in order to make changes or add to the results there are extra steps required

Business applications

This might ultimately be the ultimate end result for governmental blockchains

1) Freedom of information act and other disclosure legislation

2) Need for transparency

3) Connects back to the benefits of blockchain

- Efficiency
- Transparency
- Cost savings

Consortium

Arguably the most popular blockchain format currently in the marketplace

Think of it like a joint venture that is co-managed and co-funded by the founding or largest members of the network

Implemented by the Big 4 and other industry specific groups

Allows the spreading of risk, cost, and liability between the network participants

Business applications



Might be the ultimate evolution and development of the numerous private blockchains



1) Development of sector specific models



2) Already underway with the rollout underway via

IBM
Microsoft
JP Morgan



Assist with standardization and regulatory development

Cryptocurrencies

What's the deal with that?

How do cryptocurrencies work?



Every cryptocurrency is different, so let's stick with Bitcoin



The original cryptocurrency that started the entire conversation



Cryptocurrencies are connected to an underlying blockchain

Every crypto needs a blockchain, but not every blockchain needs a crypto

How are they different from fiat?

Bitcoin

- Fixed supply (21 million)
- Requires investment to create new units
- Not issued by a government or central oversight authority
- Borderless
- Cryptographically secured

USD

- Unlimited supply (printer go brrr)
- No investment required to increase supply
- Controlled entirely by central government or central bank
- Linked to specific nation-state
- No inherent security

Current status of cryptocurrencies?

- Achieving mainstream adoption (Fidelity, Galaxy, Goldman Sachs, etc.)
- Lack of consistent regulation and accounting guidelines are significant headwinds
- Still hitting all-time-highs, and volume/interest has increased
- Interoperability and price volatility preventing widespread mainstream utilization
- Good progress, but much work remains

Different cryptoassets (more than bitcoin)

Crypto-classes

- Decentralized cryptocurrencies
 - Bitcoin
- Semi-centralized cryptocurrencies
 - Stablecoins
- Centralized cryptocurrencies
 - Central bank digital currencies

Applications

- Smart contracts
 - Enable blockchains to talk to other technology
- Decentralized autonomous organizations
 - Organization governed by smart contracts
- DeFi
 - Banking without the banks

Poll Question 3:

What is the first step an organization should consider when developing a crypto payment strategy?

- a. How to file taxes correctly
- b. What to do with unrealized holding gains/losses
- c. Interoperability with existing technology systems
- d. Which types of crypto are going to be accepted

Poll Question 3 Results: (Placeholder)

Crypto Accounting

Let's remember



Blockchain is NOT an accounting system



Nothing to do with accounting



It is called a “ledger” but it’s not like ledgers we are used to discussing



More specifics to remember as well

What blockchain doesn't have



No debits



No credits



No income statement



No balance sheet



No cash flows



Blockchain is just a record of transactions at a certain date in time

UTXO model (Bitcoin)



Bitcoin: Unspent transaction output (UTXO) model



How the balance of BTC is tracked



UTXO equals transfer of coins



A transaction spends coins (UTXOs) and creates new coins (UTXOs).



All inputs (UTXOs) must equal all outputs (UTXOs).

Account model (Ethereum)

- Ethereum: account-based balance model.
- Entire record of the Ethereum is the current state of wallet balances
- The balance in an account (wallet) is the total number of coins, Ether (ETH).
- Uses debits (subtracts) and credits (add) to update account balances
- This is like a journal entry with a debit and credit of the same amount.



ethereum

Audit Implications

Core elements to keep in mind



Every blockchain is different and needs to be monitored individually



Controls will not become less important



Data access and integrity are more important



Audit will need to evolve and change



Clients need to be a part of this conversation

Audit Implications, cont.



Core components on blockchain
redefine the audit

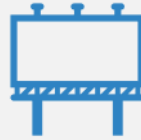
- Traceability
- Transparency
- Consensus data approval
- Tamper resistant
 - Not immutable!
- Real time nature of data communication

Blockchain impact on audit

Generates the following questions:

- 1) How do we avoid the black box of automation as processes are automated?
- 2) Are there processes in place to maintain appropriate authorization over the source code?
- 3) Do we have controls over smart contracts?
 - a) Smart contracts are what make blockchains “work” and interact with other technology systems?
- 4) Blockchain by itself will not verify the accuracy of information

Starting points



Everywhere!



Audits try to attest
to

Value
Completeness
Accuracy



Access to network level
information can assist with all of
these audit functions

Audit considerations



Blockchain will change the workflows associated with internal processes at the both

Client
Audit and accounting firm



Monitoring of data on-ramps and off-ramps will need to increase to accompany the change in data flows



Auditors need to understand how the blockchain is functioning inside the client

And why!

Poll Question 4:

Which of the options below correctly states how NFTs are different from Bitcoin?

- a. NFTs are non-divisible and are not used as a medium of exchange
- b. NFTs valuation can go up and down by double-digit percentages
- c. Every bitcoin is a non-fungible and unique asset
- d. Bitcoin is widely accepted as a store of economic value

Poll Question 4 Results: (Placeholder)

Resources

Off the Top

For blockchain and cryptocurrencies, there are a few core items to keep in mind

- 1) Start with the context (why?)
- 2) Explain how this technology is different (how?)
- 3) Show the progression of the technology (when?)
- 4) What organizations are using this technology (who?)
- 5) What impacts this will have on accounting (what?)

Action Steps

- 1) Seek out other faculty that are already doing these types of activities at other institutions
- 2) Utilize courses such as those at Coursera or Udemy
- 3) Actually, EY offers courses for free for faculty and universities
- 4) IMA and AICPA offer a whole suite of programs
 - a) Certificates, courses, CPE
- 5) Some even developed by yours truly 😊

Other Resources

- Anders Brownworth – MIT Lecturer, provides a great free visual demo of blockchain - <https://andersbrownworth.com/>
- EdX - <https://www.edx.org/learn/blockchain>
- Blockchain courses - <http://tech.seas.harvard.edu/free-blockchain>
- Coursera top courses - <https://www.coursera.org/courses?query=cryptocurrency&page=1>
- Institute of Management Accountants - https://imaonlinestore.com/PersonifyEbusiness/Product-Details/productId/72199663?_ga=2.79888983.1105704816.1587735468-1396774479.1575656940
- AICPA programs - <https://certificates.aicpastore.com/certificate-programs/blockchain>
- AICPA whitepapers & research - <https://www.aicpa.org/interestareas/informationtechnology/resources/blockchain/digital-assets.html>
- IBM free resources - <https://www.ibm.com/blogs/corporate-social-responsibility/2020/03/pandemic-impacts-millions-of-students-globally-can-digital-learning-help/>

Courses for faculty audit?

- Developed by yours truly 😊
- 1-credit course on cryptocurrency**
- 1-credit course on blockchain
- 3-credit graduate course on emerging technologies
- ** being offered in Fall 2021

Thank you!

- Questions?
- Comments?
- Jokes?
- Email – drseansteinsmith@gmail.com
- Twitter - @seansteinsmith
- LinkedIn – Sean Stein Smith

Questions and Answers



Sean Stein Smith, CMA, CPA, CFE, CGMA
Assistant Professor
City University of New York– Lehman College



Jodi L. Ryan, CAE
Director, Member Engagement
IMA

Thank You to Our Featured Presenter!

Sean Stein Smith, CMA, CPA, CFE, CGMA
Assistant Professor
City University of New York– Lehman College



The Association of
Accountants and
Financial Professionals
in Business

Final Reminders

- ▶ **Complete the Evaluation survey**– 2 options
 - On your screen
 - Evaluation Survey icon at the bottom of your console
- ▶ **Access to your CPE Certificate** – 2 options
 - Click the “CPE” icon at the bottom of your console
or
 - Click the link in your post-event e-mail
- ▶ Please print a copy of the CPE certificate for your records.
- ▶ Your CPE credit will be automatically recorded in your transcript.



The Association of
Accountants and
Financial Professionals
in Business

Thank you!



The Association of
Accountants and
Financial Professionals
in Business