

BUILD A BLOCKCHAIN FUTURE

FOR

ALL OKLAHOMANS

Prepared for Interim Study (IS) 2019-10
- RE: Blockchain, Virtual Currencies, and
Potential Implementation

Pistis.io Co-Founder and CEO

Feng Hou

October 22, 2019
Oklahoma City, OK

ARE YOU VERIFIABLE ON BLOCKCHAIN?

Name:

Feng Hou

Employer:

Pistis.io

Position:

Co-Founder and CEO

Launched:

June 2019

Public Key:

1HYPiutzwR883MSmw6GW

Blockchain Universal ID:

4vf641517554ac449da96e0a





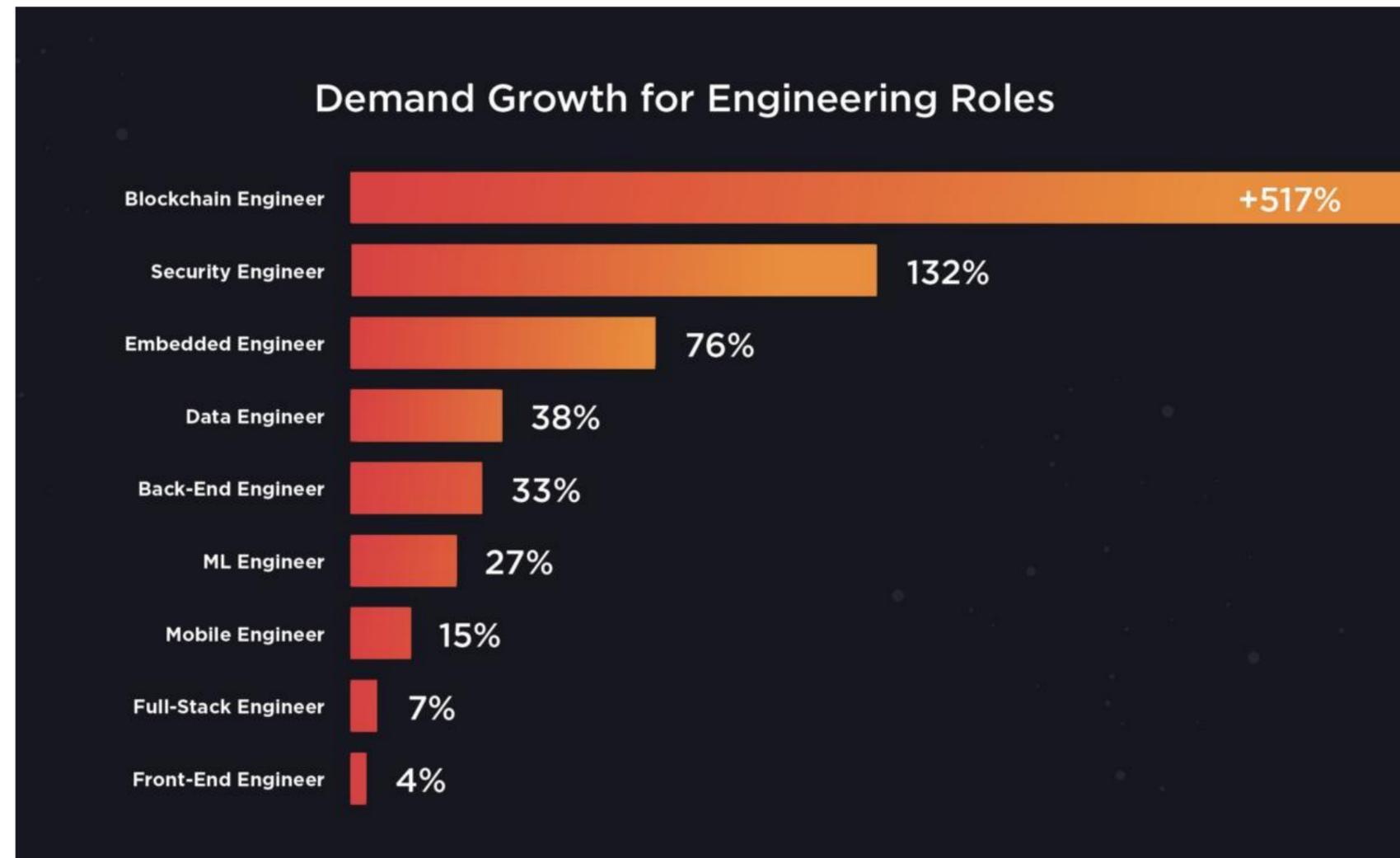
Demystify Blockchain:

- Blockchain is a decentralized distributed ledger technology (DLT).
- A gigantic spreadsheet or database that captures every transactions on the chain and is replicated and distributed to everyone who participates in the network so that all copies of the database are identical.
- Blockchain is the new Internet. If the current Internet is the internet of information, blockchain is the internet of value.

Demand for blockchain engineers is 'through the roof'

A new jobs report shows software engineers with blockchain skills are in higher demand than at any time in the past, and the number of positions has grown more than fivefold in the past year.

Computer World: <https://www.computerworld.com/article/3345998/demand-for-blockchain-engineers-is-through-the-roof.html>



The Blockchain Job Market Is Booming

In recent times, blockchain has become a magic word for organizations, who are applying the technology to solve complex problems. Some of that magic seems to be rubbing off on career prospects for those working in the industry.

Investopedia: <https://www.investopedia.com/news/blockchain-job-market-booming/>

Top-30 employers by number of blockchain related vacancies

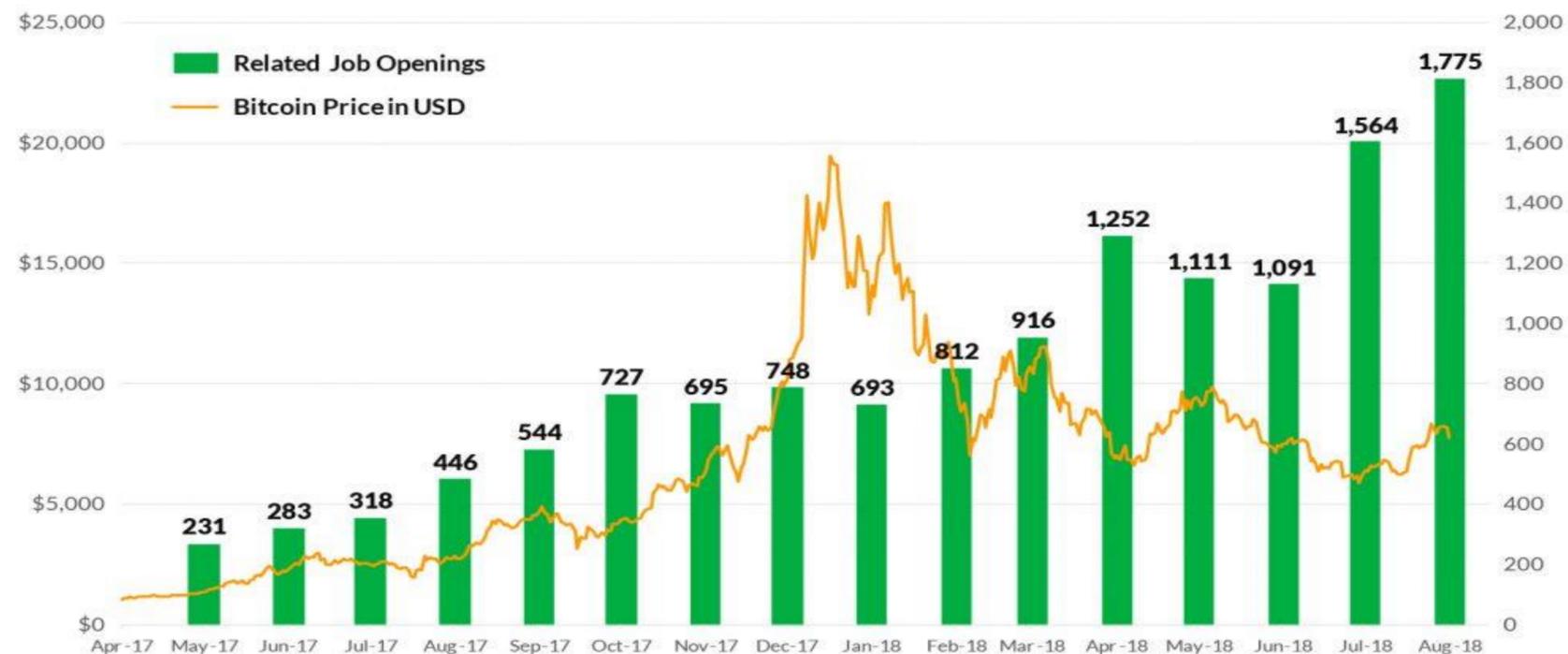
Company	Vacancies	Company	Vacancies	Company	Vacancies
IBM	428	Latoken	64	KPMG	45
Cisco	288	Ripple	62	Air France	40
Accenture	213	Block.one LLC	59	Facebook	40
Oracle	144	Blockchain	53	Luno	38
PwC	140	Amazon	53	Verizon	35
Ernst & Young	132	Overstock	52	Capital One	34
Coinbase	91	Consensys	48	Chain Analysis	33
Binance	73	Deloitte	47	Visa	31
SAP	66	Kraken	47	Axiom Zen	27
Collins Aerospace	65	CGI	45	BitFury	20

The Rise of Bitcoin & Blockchain: A Growing Demand for Talent

Key Findings: Companies have rapidly invested in hiring for roles related to Bitcoin and blockchain, even in the face of regulatory uncertainty and price volatility. 300 percent increase over the same period last year. The median salary for blockchain-related job openings is \$84,884 per year. This is \$32,423 or 61.8 percent over the US median salary of \$52,461. Software engineer was the most common blockchain job open on Glassdoor.

Glassdoor: <https://www.glassdoor.com/research/rise-in-bitcoin-jobs/>

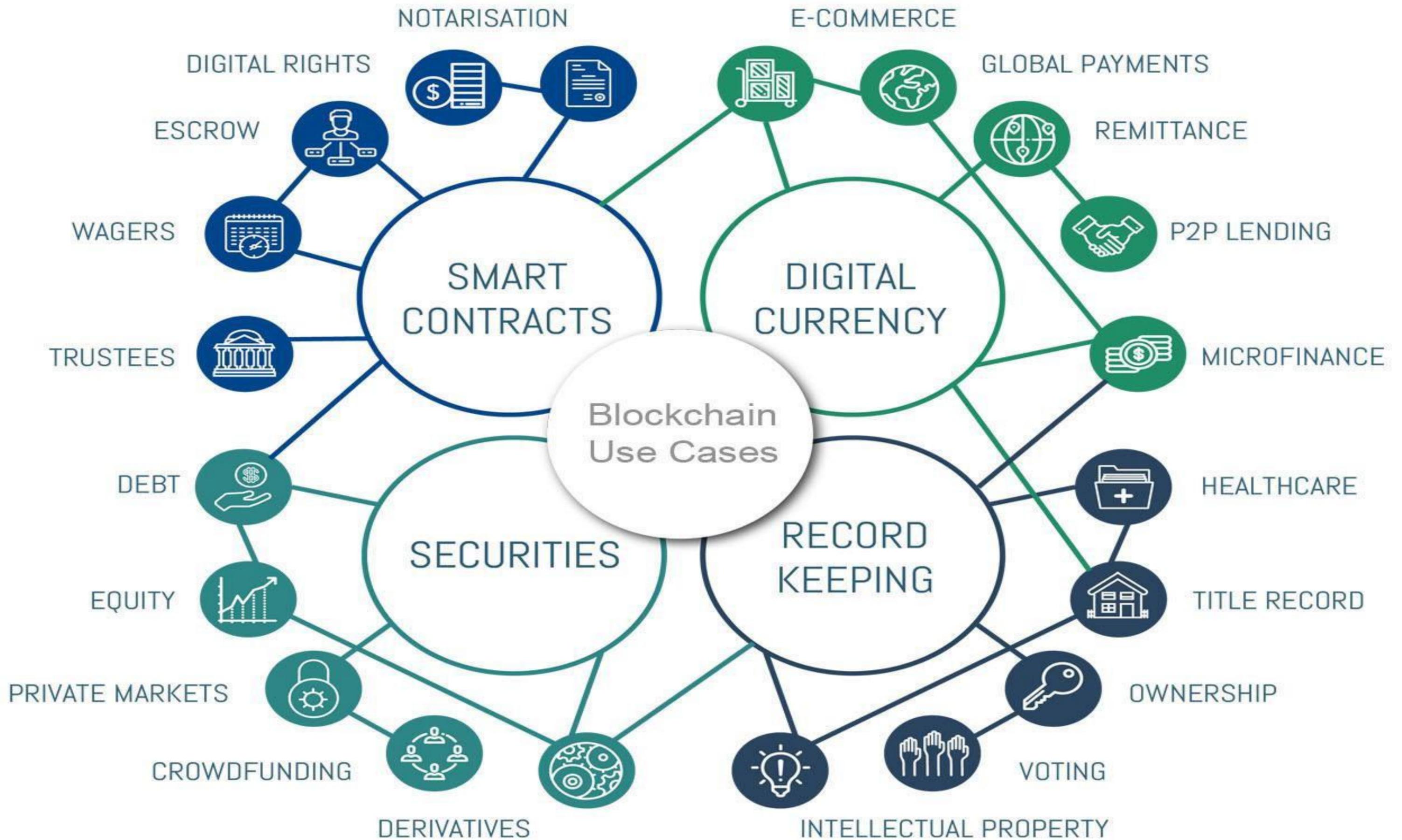
Bitcoin Job Growth Outpacing Cryptocurrency Prices



Source: Glassdoor Economic Research (glassdoor.com/research), CoinMarketCap

What Is the BIG Deal?

- **Blockchain technology is currently being adopted at all levels of the business environment including utilities, healthcare, payments, supply-chain, government, agriculture, and more. (Forbes)**
- **Venture capital investment in cryptocurrency and blockchain startups will likely set a new all-time high in 2019. (Reuters)**
- **Blockchain is gaining momentum this year due to the increasing interests of some of the largest technology companies such as Facebook, Apple, Twitter, and IBM, etc.**
- **PwC survey found that fully 84% of responding companies have actively used blockchain.**



Why Is It Important?

- **All about our customers and their digital experience;**
- **Business cost savings and operational efficiency;**
- **Prevent any fraudulence;**
- **Strengthen lifelong customer relationship;**
- **Build your business brand;**
- **Transform your business and create new business models;**
- **Boost your business top-line and trim your business bottom-line.**

What Can Blockchain Technology Do?

- It provides data security – Digital signature with cryptographic keys, hashing and time stamp.
- It eliminates single point of failure – Blockchain is a distributed ledger technology (DLT), it is the most robust with redundancy.
- It provides audit traceability – The chain of blocks tied together with hashing and time stamp creates a perfect audit trail.
- It ensures process integrity – Blockchain data is tamper-proof, it can only be appended under 2 conditions: 1. Correct match of cryptographic keys, and 2. 51% verification rule.

How Blockchain Smart Contract Works?

- **Business agreements are codified into blockchain smart contract**
- **Process:**
 - ✓ **Transactions are captured to smart contract**
 - ✓ **Smart contract monitors trusted data sources for qualifying events**
 - ✓ **Funds are released automatically in the case of a qualifying event**
- **Benefits:**
 - ✓ **Reduced fraudulence**
 - ✓ **Lowered operational costs**

Three Different Perspectives about Blockchain:

- From technology perspective, blockchain is a distributed ledger technology (DLT). It is an open and distributed database that can record transactions among parties efficiently and in a verifiable and permanent way.
- From business perspective, blockchain is like an exchange network that can transact value among business parties.
- From legal perspective, blockchain can provide transaction validation mechanism without any intermediary assistance.

2019 State Legal and Administrative Actions re. Cryptocurrencies and Blockchain

Executive Summary

- ❑ In 2019, a total of 34 states including Oklahoma have passed bills to promote and regulate the use of cryptocurrencies and blockchain technology.
- ❑ 25 states (74%) were more concerned about cryptocurrency.
- ❑ 14 states were trying to promote the use of blockchain.
- ❑ Oklahoma along with Arkansas, Nevada, New York, North Dakota, and Washington has adopted SB 700 on April 25, 2019 to recognize records, contracts, and signatures secured through blockchain technology to be a valid, electronic form.
- ❑ South Carolina, West Virginia and Wyoming have passed the legislations to establish state sanctioned fintech sandboxes.

Major Challenges:

- **Lack of awareness and knowledge about blockchain;**
- **Lack of killer apps to appeal to the end users and investors;**
- **Lack of supportive policies and regulations to attract investors;**
- **Lack of well trained blockchain workforce to support business.**



Pistis.io makes it **EASY** to use **Blockchain** for

- Education
- Real Estate
- Government
- Financial Sectors
- Insurance
- Others

Pistis.io helps businesses and other organizations to create their own blockchain initiatives.

To learn more:

 cbe@pistis.io  www.pistis.io

Pistis.io makes it EASY to use blockchain for:

Education

REGISTER NOW

Announcement

Step by step instructions for posting identity and ownership documents on blockchain:

It is extremely important that we protect our identify and ownership of our property such as birth certificates, passports, professional certificates and property deeds, etc. Of course, we can put these documents in a safe at home, or at our banks, or even scan them and save them online with password protection, but none of these will create permanent records that are secure, immutable, tamperproof, ready to share and verify as on blockchain. The best way and the easiest way to do so is to follow the step by step instructions below to post your important documents on Pistis.io and you will have them forever. Click [here](#) and follow the step-by-step instructions to start protecting your important identity and ownership documents.

"The real power of Pistis.io is not just what it can do for you, but what YOUR imagination can take you to."- *Pistis.io Co-Founder and CBE*

It is EASY to use blockchain

STEP 1 ➔ Register an account

STEP 2 ➔ Design/upload your certificate

STEP 3 ➔ Issue your certificate

Right Technology

- We all know now how profoundly the Internet has transformed our lives; the next technology that will have such an impact is not the buzz words you may have heard such as big data, AI or even social media, it is blockchain.
- Blockchain works at three different levels:
 1. Record keeping. Blockchain provides secure, tamper-proof, readily sharable and verifiable record to whoever needs it at the exact time when it is needed. All medical records, bank records, professional licenses, degree diplomas and voting records, etc. can be placed on blockchain.
 2. Smart contract. As the second generation of blockchain, Ethereum can use smart contract to automate business processes. Any business processes that can be put into “If... then...” business logics, they can be automated by smart contract.
 3. Tokenization. The real power of blockchain technology is to use tokens for many different purposes. Any business transaction can be a token; so can a training session. Anything that can be measured can be tokenized. Tokens can function like a trigger or financial reward.

Innovative Leadership

- ✓ Advocating blockchain technology takes thoughtful and innovative leadership;
- ✓ We have such outstanding leaders in Oklahoma as Dr. Kathaleen Reid-Martinez, Michael Mathew, Mr. Matt Moore and Senator Nathan Dahm;

✓



An Incredible Initiative

Dr. Kathaleen Reid-Martinez
Provost and SVP
Oral Roberts University

Mike Mathews
VP for Innovation
& Technology
ORU

What did ORU see that caused them to remain thought leaders in digital credentials powered by Blockchain?



says very poignantly "why can't we imagine 90% of the world, obtaining some form of education, knowledge, or intelligence as we integrate all the technologies to deliver and assess hundreds of modalities of education."

ORU recognizes that we live in a fluid world, with fluid economies, fluid governments, fluid education systems, and fluid jobs. This means if ORU desires to meet the needs of fluid world, their education and technology needs to be nimble to flow with students. "We are all moving forward at a fast pace, and to just 'do technology' is the wrong approach. We have to creatively find ways to leverage technology that creates less confusion, ease of use, and makes studies more gratifying", says Reid-Martinez. ORU knows that to transform global education and technology into fluid modalities, it will require a trusted and fluid model for credentialing; thus the reason for digital credentials using Blockchain technology.

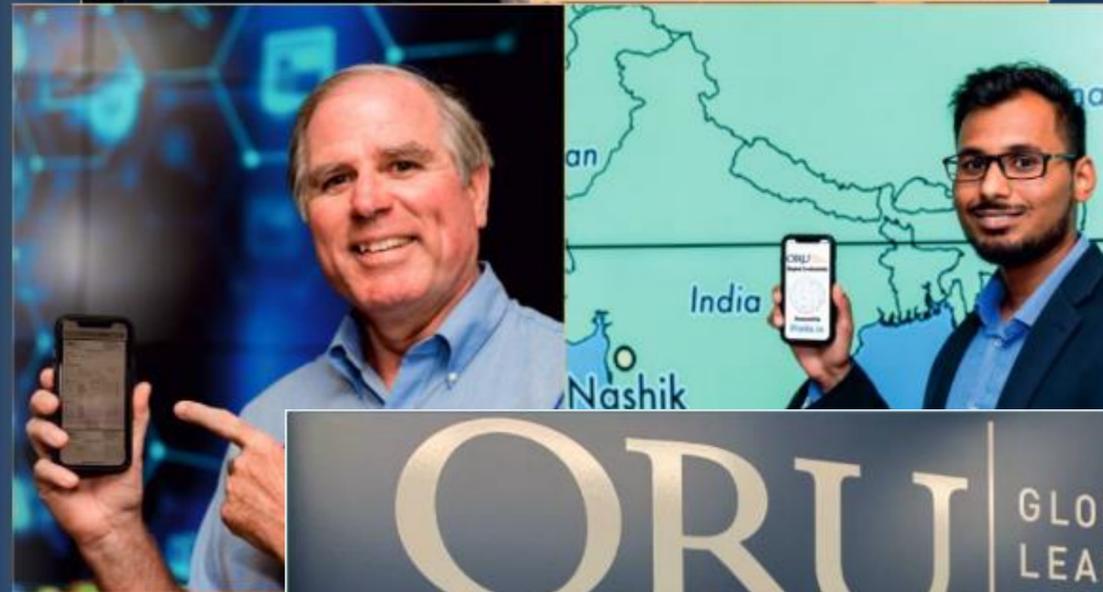
As a Provost and SVP for Academic Affairs, Kathaleen has the perfect smell and vision for solutions that will finally deliver fluidity in a personal and

Oral Roberts University has a passion to educate the 195 nations of the world. Even though they have seen the growth from 85 nations to 114 nations during the last six years, they know that only 6% of the entire world populace has any form of post high school degree,

diploma, or certificate. This small number is far from the 46.5% of U.S. citizens having a post high school degree, diploma, or certificate. This realization has motivated Dr. Kathaleen Reid-Martinez to create a concept of 'fluidity' while leveraging Blockchain. She



Team Evaluating the Process (from left - Developer, Provost, Registrar)



Great Partnership

- ✓ As a community-based technology, blockchain needs partners to establish ecosystems.
- ✓ For education, it means students, teachers, parents, employers and local communities.
- ✓ For business, it means customers, employees, supply chain, financial services, etc.

Based on the mutual journey of Feng Hou and ORU below are eight recommendations for choosing the correct digital credentials Blockchain-based vendor.

- 01 Do not use Blockchain just for the sake of the technology.** A Blockchain-based solution must be driven by educational needs and in alignment with an institution's strategic priorities.
- 02 Optimize educational processes first with a clear data governance structure.** Blockchain technology cannot turn a bad education or business process into a good one. With a clearly defined process (workflow) and data governance structure, an institution can optimize and automate the process that helps students and the institution.
- 03 Define the community of stakeholders and solicit their participation.** "Blockchain is a community-based solution and works best in collaboration," Feng Hou emphasizes. "Identify the stakeholders early on and create a solution that all of them can benefit from."
- 04 Team up with a Blockchain vendor/partner while also developing internal Blockchain knowledge resources.** Avoid developing a Blockchain solution on your own to begin with; collaborate with a reputable Blockchain vendor offering a solution that complies with national and international standards, and has a minimum of ten years of student information system experience.
- 05 Ensure security of data integration and transactions.** Based on your data security needs, select the right design for a public or private, permission-less or permissioned Blockchain solution.
- 06 Understand token functions before developing smart contracts.** Not every Blockchain solution needs to use a smart contract. Hou explains, "In Blockchain technology, a measurement can be designed to represent a unit of value, to provide access to a service such as online learning; to reward successful completion of a task as in a training certificate, or a training experience or test in virtual reality."
- 07 Be value-driven: Seek a solution with security, privacy, speed, and lower costs.** Blockchain can help dramatically increase the speed of business operations by eliminating intermediary layers.
- 08 Evaluate what is in the best interest of students and life-long learner.** Take a step back and evaluate if your current processes help students get life-long access to their digital assets and credentials. Next, ask your students if the institution can improve the access to their educational pathway and accomplishments. If improvement is needed, providing digital credentials via a Blockchain-based platform is one of the simplest methods toward improvement.

Deep Knowledge & Experience

- ✓ Experts in blockchain adoption in different areas;
- ✓ Leading national and international blockchain efforts;
- ✓ Invited to the White House to offer advise;
- ✓ Passionate about leveraging advanced technology to level the playfield for all!

Blockchain Disadvantages:

- **Slow performance in terms of transaction speed – Since all transactions need to be verified, computer nodes (admins) must solve a math puzzle which takes minutes to add a block to the chain.**
- **Space issue as the block size is getting bigger and bigger, the blocks fill up the storage space continuously.**
- **Highly unlikely, but based on the 51% rule, if more than half of the computers working as nodes “lie” or fib a transaction, the lie/fib becomes truth.**

A New Blockchain Way of Thinking

Blockchain is not only a new technology but also a new way of thinking:

- 1. Any services and processes that can be optimized should be optimized NOW,**
- 2. any services and processes that can be digitalized should be digitalized NOW, and**
- 3. any services and processes that can be automated should be automated NOW.**

We need to accelerate the adoption of blockchain:

- Accelerate learning and understanding of the great impact that blockchain will have on our business. It is no longer enough for the business leaders to just wait for a killer app, we need to understand the transformational power of blockchain.
- Accelerate collaboration among business partners to build a blockchain ecosystem and leverage blockchain to address some of the big challenges that our business has been collectively facing such as in higher education low graduation rate, high costs and high percentage of college graduates who were underemployed, etc.

Thank You!