

Slide 5

- Every single node on the network processes every transaction, coming to its own conclusions and then voting on those conclusions to make certain the majority agree with the conclusions.

Slide 6

- For example: Ripple runs a permissioned blockchain. That means that they get to decide who acts as a transaction validator on their network. They have chosen CGI, MIT, and Microsoft while also building its own nodes in different locations around the world.
- A node in a public blockchain, like Bitcoin's, is anyone who has interest in being a transaction processor - these are known as "miners".
 - "Mining" is incredibly expensive because it requires a large amount of electricity, so why do it?
 - When miners are the first to complete a block of transactions they are rewarded with Bitcoins

Slide 9

- **JUST A FEW POSSIBILITIES FROM UTILIZING BLOCKCHAIN (THE POINT IS TO SHOW THERE IS NOT ONE SINGLE, OR EVEN A FEW, POSSIBILITIES FOR THE TECH TO TRANSFORM OUR WORLD)**
- Financial services
 - Transaction speeds/costs
 - Eliminates the time that it takes for intermediaries to receive and validate transactions as the network of nodes confirm transactions and update the ledger in real time.
 - Santander believes that blockchain could reduce banks' infrastructural costs by \$15-20bn a year by 2022.
- Government and healthcare
 - **For example:** Humana, UnitedHealth Group, and Quest Diagnostics are joining forces to maintain one collective healthcare provider directory supported by blockchain technology that could be updated by all the parties.
 - *Health Plan Week* estimated that in 2017 the cost of updating provider data is a whopping \$2.1 billion. The federal government can even fine health insurers for not keeping provider directories up to date.

- There is work being done to create applications that would allow for secure voting via a blockchain.
- Global supply chains/trade
 - Leads to transparency between suppliers across different states/countries.
 - Makes it easier to keep track of things in real time.
 - Members of the network can see what's going on as it happens, plus this system helps keep all those involved accountable for their end of the bargain.

Slide 10

- Semiconductors are vital components of modern day electronics devices; they are in all of our devices.
 - Semiconductor demand will increase as time passes regardless of blockchain, but blockchain popularity can act as a catalyst for this increase in demand.

Slide 13

- Overstock.com was founded in 1997 and launched in 1999.
- Overstock.com initially sold exclusively surplus and returned merchandise on an online e-commerce marketplace; it now also sells new merchandise.
 - Industry classification: Catalog & Mail Order Houses
 - Market Cap: 1.46B

Slide 14

- Patrick Byrne (Overstock and tZero CEO) has been positioning tZero to be the first blockchain-based equity exchange for trading blockchain shares for since 2015.
 - The goal is to create an exchange that operates without the need for banks or financial institutions as middlemen in the trades.
 - "The trading and settlement aspect of Wall Street that are separated will be united, preventing weird stuff that happens between the two actions"
- tZero supports equity tokens.
 - Equity tokens are a crypto token that derives its value from a tradable asset, that represent ownership of an asset, such as debt or company stock, but that is supported by blockchain.

- Equity tokens are subject to federal securities regulations - which tZero/Overstock has welcomed and encouraged.
- **In case they ask how if tZero has gained any traction:**
 - Preferred equity: Entitles investors to a currently-unspecified percentage of tZERO's quarterly profits. Additionally, platform users will receive a discount on trading fees if they choose to pay with the token instead of USD.
 - Moreover, above 10,000 subscribers have registered for getting the status of accredited investors on the Saftlaunch platform where the ICO is hosted. Some of the initial offers by individual investors are said to be as high as \$5 million for token allocations.

Slide 16

Final thoughts on Overstock.com

- Analysts are split: the bears believe that Medici Ventures and tZero are going to fail and drag the stock price down with it, other analyst with bullish visions for the future have target prices significantly higher than current levels.
- Ongoing investigation by the SEC to ensure that tZero is operating within the rules, which shocked stock price, but was welcomed by tZero and Overstock.com
- Only time will tell what the true value of their venture into blockchain tech is, but one thing is certain: Overstock.com was one of the first corporations to actively pursue integrating blockchain and the foundation was being laid years before the 2017 cryptocurrency/blockchain fervor.

Slide 17

IBM

- In a world of high-octane tech stocks, IBM has had a chance to slip under the radar.
- IBM has not been as interesting to follow as other large tech stocks over the past several years, but they are making positive progress with their involvement in blockchain.
 - Industry classification: Information Technology Services
 - By and large the largest company in its sector based on market cap, but has a P/E that ranks 4th in the sector.

- Market Cap: 143.53B
- P/E: 12.94
- Forward P/E: 10.97
- **Dividend of nearly 4%**

- Key member of the Hyperledger project
 - Open-source blockchain project working to push the technology forward.
 - Open source refers to a computer program in which the source code is available to the general public for use or modification from its original design. Open-source code is meant to be a collaborative effort, where programmers improve upon the source code and share the changes within the community

- IBM's blockchain projects are hard to pinpoint because they are involved with approximately 400 clients in numerous areas of business all around the world.
 - Banking, Financial markets, healthcare, government, insurance, and supply chain.
 - Some of their clients include: Unilever, Walmart, Nestle, Maersk, Deutsche Bank, AIG, Smart Dubai Office
 - Blockchain makes up a small part of these firms' business, but it is quickly becoming a more integral component of their structures.

- IBM is sounding like an exciting tech stock once more:
 - Quote from CFO James Kavanaugh: "Before 2014, around two-thirds of our investments went toward shareholders returns. Over the last three years, we've flipped that, and now two-thirds goes to investments in our business. That's a big shift. It's 34 acquisitions. It's reinvigorating our innovation pipeline to lead in AI, quantum computing, and blockchain. It's building out 60 cloud centers around the world. But it's also about skills - 50% of IBMers have joined the company in the last five years, and we have invested \$2.5 billion in training over that time".

Slide 19

- According to the Semiconductor Industry Association:
 - Global semiconductor industry sales in 2017 = \$412.2B
 - The industry's highest-ever annual sales and an increase of 21.6% compared to its 2016 total

Slide 20

ON Semiconductors: is driving energy efficient innovations, empowering customers to reduce global energy use

- The business segment most likely to see a boost courtesy of the blockchain movement is their power management segment.
 - Blockchain technology requires a massive amount of energy/power at the nodes and ON has demonstrated that they are a leader in highly energy efficient power supplies innovations.
- They have several different business segments that have shown to be successful in the past, especially their automotive applications (such as image sensors for car cameras).

Slide 21

Micron Technology: as blockchain, and technology in general, becomes increasingly demanding, the amount of memory required is increasing at an impressive rate.

- They are in a great position due to the current state of the memory chip market.
 - The demand for memory chips is expected to increase much faster than supply can keep up with, driving the price of memory chips higher and higher.
 - This environment has allowed for strong improvements in operating margins, and the trend is expected to continue in 2018.
- Micron has also recently made a large capital investment to increase production to meet the high demand for memory chips.

Slide 22

Applied Materials is the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world.

- They sell the equipment that allows chipmakers to produce their chips.
- Founded in 1967, AMAT has a long track record of success and is in a great position to take advantage of the increased demand for semiconductor devices.
 - **Chip/device makers will need to invest in capacity additions to meet demand.**
 - **2017 global market share: 27%**