

The Future of Cryptocurrency and Blockchain

AFP Arizona

July 18, 2018

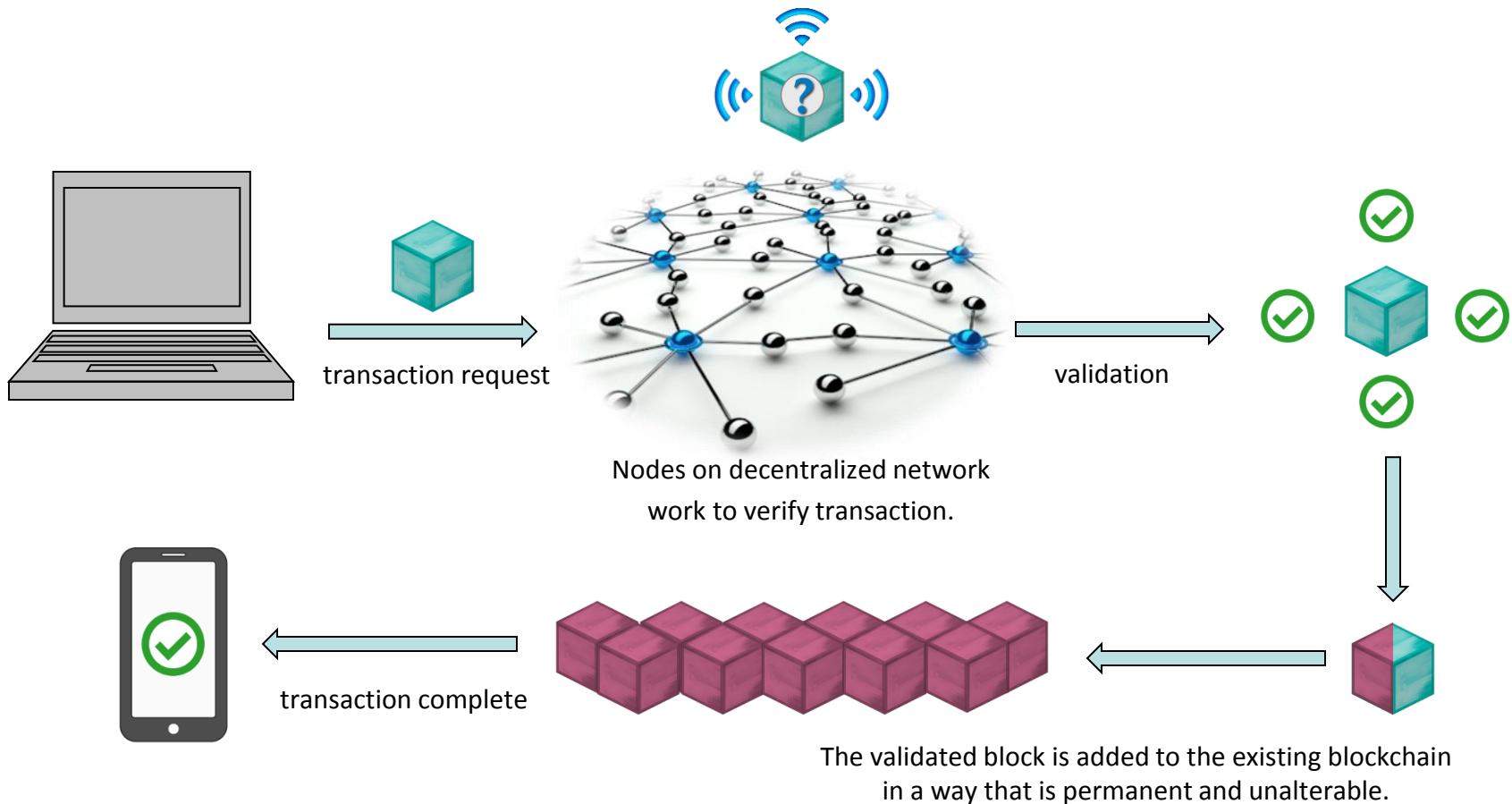
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What is blockchain?

- A blockchain is an immutable ledger of transactions or information – essentially a decentralized online database.
- Each “packet” of data is called a block.
- When a user initiates a transaction, a block (or data in a block) is “sent” to the distributed computer program for verification. (Hence, blockchain is often referred to as “distributed ledger technology” or “DLT.”)
- The computers on the system (nodes) work to verify the block by solving complex algorithms. The nodes have to agree that the newest block is legitimate and congruent with all previous blocks (earlier links in the chain).
- Once verified, the block is added to the sequential chain of transactions/information on the ledger.

Blockchain Basics



Bitcoin Illustration



Barb wants to send
0.40 bitcoin to John.

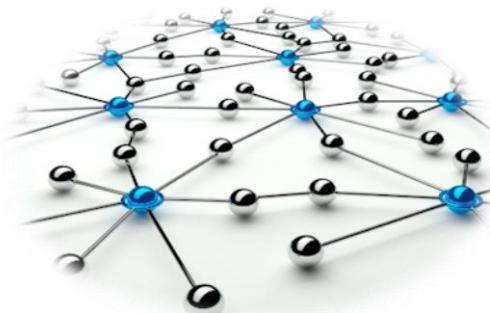
transaction request



Bitcoin Illustration



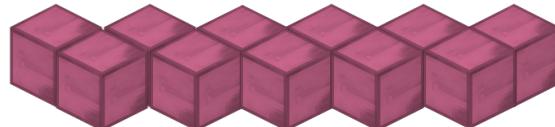
transaction request



validation



transaction complete



The validated block is added to the existing blockchain in a way that is permanent and unalterable.

Top Cryptocurrencies

(as of July 13, 2018)

#	Name	Symbol	Market Cap	Price	Circulating Supply	Volume (24h)
1	Bitcoin	BTC	\$106,539,818,150	\$6,213.14	17,147,500	\$3,865,940,000
2	Ethereum	ETH	\$43,562,381,119	\$432.72	100,670,827	\$1,548,010,000
3	XRP	XRP	\$17,170,487,898	\$0.437326	39,262,444,717 *	\$191,670,000
4	Bitcoin Cash	BCH	\$12,005,648,019	\$696.55	17,235,775	\$365,842,000
5	EOS	EOS	\$6,131,383,133	\$6.84	896,149,492 *	\$606,520,000
6	Litecoin	LTC	\$4,380,183,437	\$76.32	57,389,558	\$262,972,000
7	Stellar	XLM	\$3,796,327,799	\$0.202297	18,766,110,217 *	\$42,797,900
8	Cardano	ADA	\$3,656,598,466	\$0.141034	25,927,070,538 *	\$72,042,900
9	Tether	USDT	\$2,711,904,913	\$1.00	2,707,140,346 *	\$2,416,670,000
10	IOTA	MIOTA	\$2,671,173,074	\$0.961016	2,779,530,283 *	\$34,230,000

Current information available at <https://coinmarketcap.com/all/views/all>

* denotes a non-minable cryptocurrency

Crypto Prognosticators

- ❖ Thomas Frey, Google: “Cryptocurrencies are going to displace roughly 25% of national currencies by 2030. They’re just much more efficient, the way they run.”
- ❖ Institute for Global Futures CEO and chairman Dr James Canton cryptocurrencies represents “the legitimisation of a new asset class emerging alongside the traditional global economy. I’d say you can expect an exponential increase of new investment vehicles to come from crypto-finance.”

Crypto Prognosticators

- ❖ Luno CEO and founder Marcus Swanepoel:

“Bitcoin might not replace all of the existing systems, but it adds a new layer of value – similar to how we still have regular postal mail and fixed-line telephones even though we have Facebook, Skype, and Gmail. The impact has already proven to be significant.

“Other currencies will probably play a different, more focused role and people may use Bitcoin to store or switch between these other currencies. Something like a global reserve digital currency, not unlike the US dollar in the current financial system.”

Crypto Prognosticators

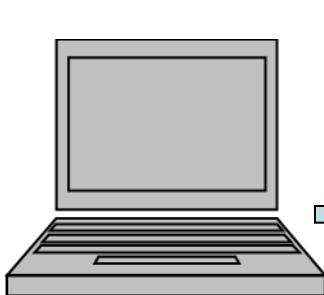
JPM CEO Jamie Dimon:

- In September, Dimon called bitcoin a fraud. "I regret making" that comment, he said on Fox Business in Jan. 2018.
- "The blockchain is real," Dimon added in the interview. "You can have cryptodollars in yen and stuff like that. ICOs ... you got to look at every one individually."
- J.P. Morgan Chase announced in October the launch of a blockchain-based system that will "significantly reduce" the number of parties needed to verify global payments, reducing transaction times "from weeks to hours." Royal Bank of Canada and Australia and New Zealand Banking Group are the bank's partners in the project, called the Interbank Information Network.

<https://www.cnbc.com/2018/01/09/jamie-dimon-says-he-regrets-calling-bitcoin-a-fraud.html>

Smart Contract Illustration

If Barb pays 20.50 BTC to John,
then John will transfer his car
title to Barb.



transaction request



Data input (an “oracle”)
signals that Barb has paid
20.50 BTC to John.



validation



Barb picks up her car.

transaction complete



automatic
execution



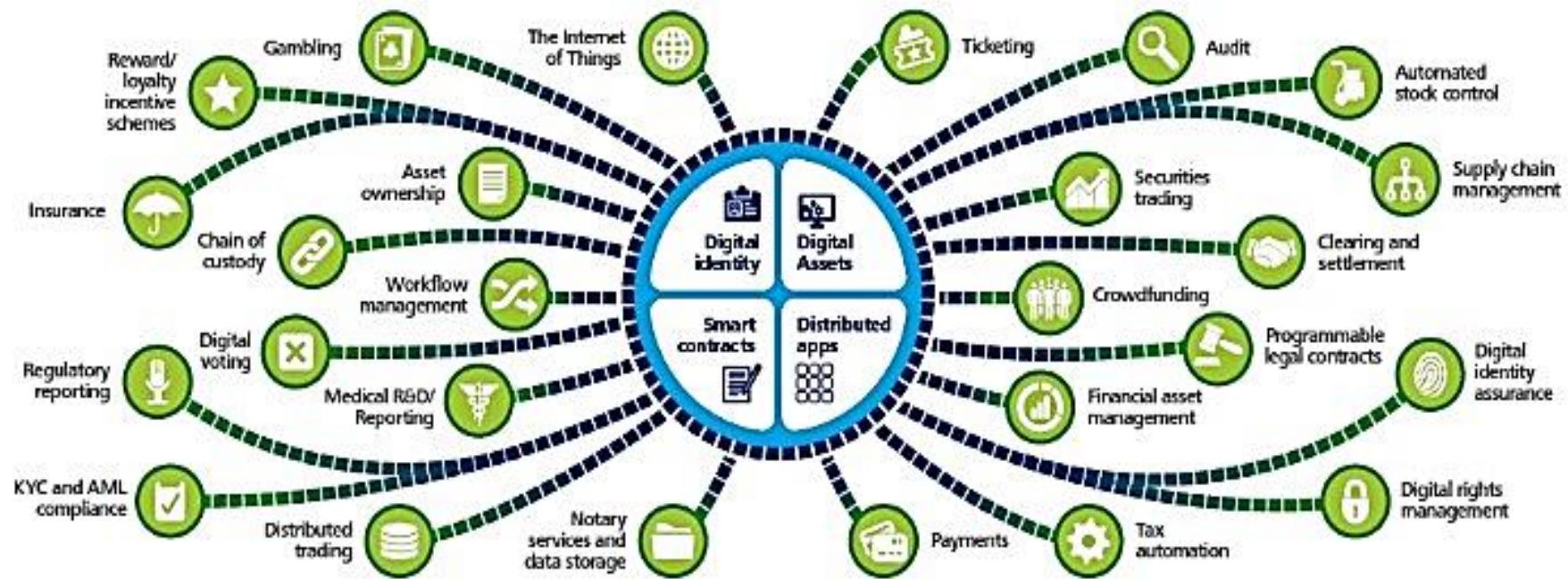
The vehicle title is recorded in DMV blockchain, and
the hardcopy original is automatically generated and
mailed to Barb.

Why Should I Care?

According to the *Worldwide Semiannual Blockchain Spending Guide from International Data Corporation* (“IDC”), worldwide spending on blockchain solutions is forecast to reach \$2.1 billion in 2018, more than double the \$945 million spent in 2017. Even more, the IDC expects blockchain spending to grow at a compound annual growth rate of 81.2% between 2016 – 2021 with total spending of \$9.7 billion by 2021.

<https://www.idc.com/getdoc.jsp?containerId=prUS43526618>

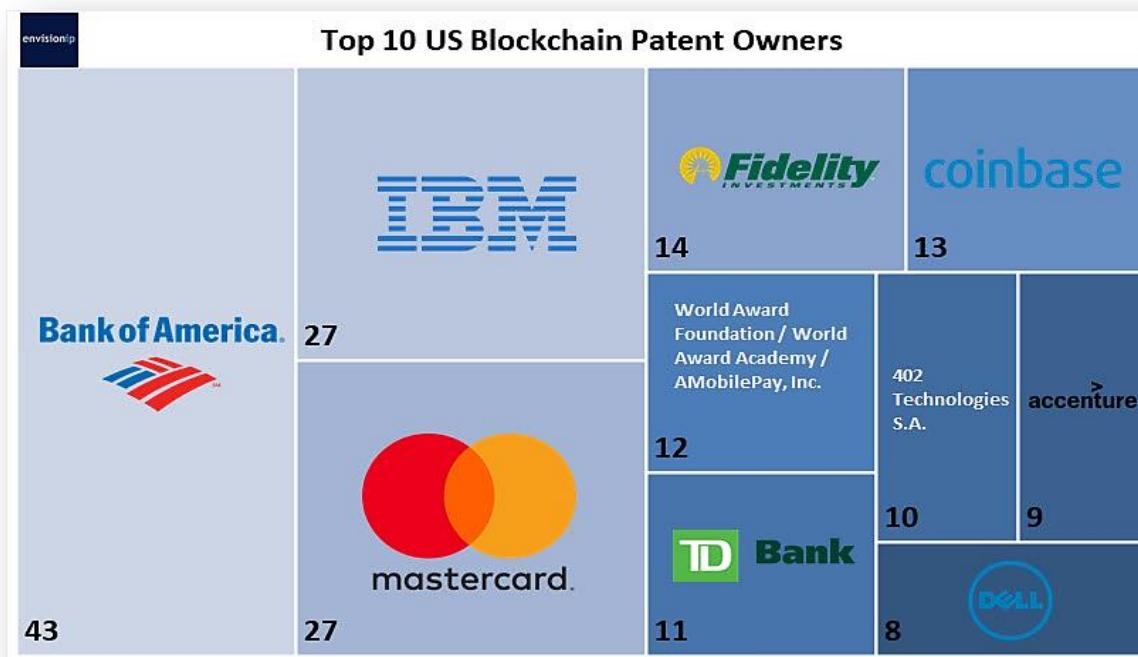
Blockchain Uses



“Blocktopus” by Deloitte

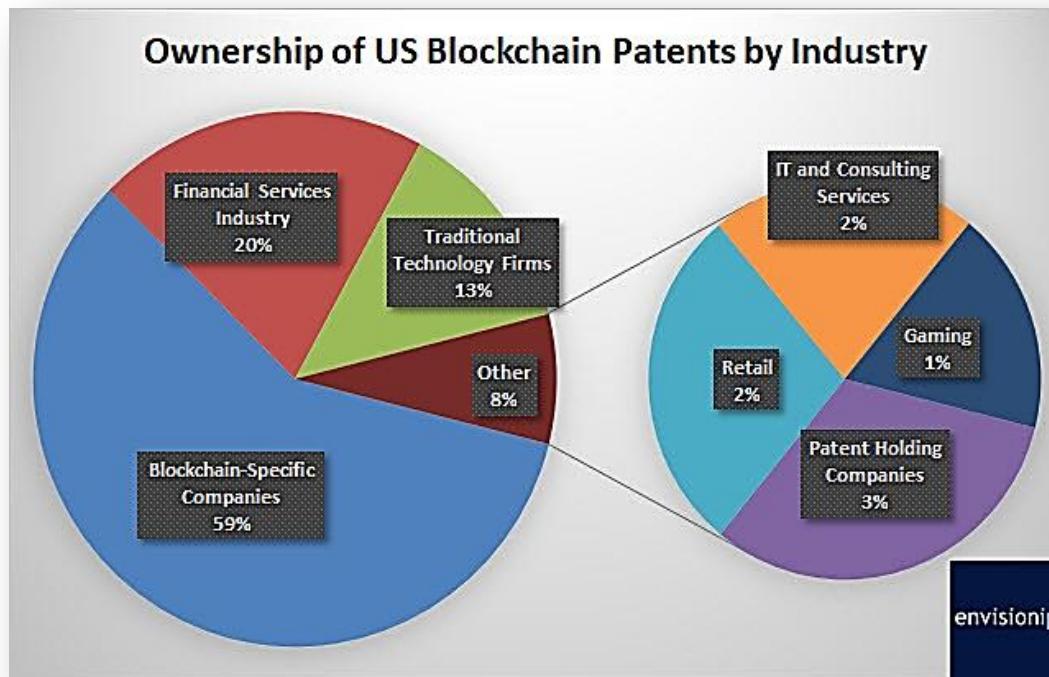
Why Should I Care?

- ❖ According to a study by PatentVue, by the start of 2018 more than 1,000 patents based on blockchain or distributed ledger technologies had been filed. <http://patentvue.com/2018/01/12/blockchain-patent-filings-dominated-by-financial-services-industry/>



Why Should I Care?

- ❖ By industry, 59% of the patents are owned by blockchain specific companies (e.g. Coinbase owns 13 patents), 20% are owned by financial service industry players (e.g. BofA owns most patents at 43), while companies like Walmart (1), Amazon (4), and Ebay (2) have only begun to enter the blockchain space.



Initial Coin Offerings (ICOs)

- Company creates new token and sells it publicly.
- Some coin offerings are selling a token that can be used within an online service blockchain.
- Others are selling new cryptocurrency or the “crypto equivalent” of shares in an investment fund.
- ICOs enable companies to release their own (often freely tradable) tokens in exchange for dollars, Bitcoin, or other cryptocurrencies for ventures that may or may not succeed.
- In the last 12 months there has been an explosion of ICOs.
- CoinDesk reports \$8.7 billion raised in ICOs.

Initial Coin Offerings (ICOs)

- Harmless crowdfund investing through cryptocurrency or securities offerings?
- SEC asserts jurisdiction over ICOs and is reported recently to have issued numerous subpoenas to firms suspected of violating securities laws.

<https://www.coindesk.com/cryptos-biggest-icos-stay-silent-sec-subpoenas/>

- FinCEN has indicated firms conducting sales of ICO-derived tokens are subject to regulation, including registration requirements, regulation as money transmitters, and relevant statutes around anti-money laundering and know-your-customer rules.

<https://www.coindesk.com/fincen-money-transmitter-rules-apply-ico-developers-exchanges/>

ICO Regulatory Issues

- Initially, many investors perceived ICOs as unregulated transactions.
- SEC's DAO Report in July 2017 changed that perception.
- Subsequently, SEC has repeatedly made clear that ICOs generally will be considered securities transactions under *SEC v Howey*.
- "I believe every ICO I've seen is a security."
 - SEC chair Jay Clayton, Senate Testimony, Feb. 6, 2018
- Securities must either be registered or meet one of the exemptions from registration (Reg D, Reg CF, Reg A+).

ICO Regulatory Issues

Reg. A+

- Title IV of the JOBS Act, also referred to as Regulation A+, allows companies that want to raise between \$3 million and \$50 million to do so from accredited ***and non-accredited*** investors.
- Tier 1 - Raise up to \$20M
 - File a disclosure document and get qualification from the SEC
 - Have financials reviewed
 - Must register and satisfy Blue Sky laws in all states from which investors invest
- Tier 2 - Raise up to \$50M
 - File a disclosure document and receive qualification from the SEC
 - Provide audited financials
 - Disclosure requirements: annual, semi-annual, and other reports
 - non-accredited investors capped at 10% of their annual income/net worth

ICO Regulatory Issues

Reg. A+

- The final Reg A+ rule limits the securities that can be offered under the exemption to “equity securities, debt securities, and debt securities convertible or exchangeable to equity interests, including any guarantees of such securities.”
- Does that mean tokens do not qualify for a Reg A+ offering?
- The process of filing for approval from the SEC to make a Regulation A+ offering involves filing Form 1-A.
- If SEC accepts the filing, the answer is the ICO ostensibly qualifies under Reg. A+.

Q & A