



Blockchain

The Answer To Your Business Needs?

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CA Expo, 24 April 2018



Over \$450 Billion
Worth of
Cryptocurrencies
are in Circulation
Today

More than 1400
Cryptocurrencies

(March 21nd 2018)

All ▾		Coins ▾	Tokens ▾	USD ▾		← Back to Top 100			
#	Name	Symbol	Market Cap	Price	Circulating Supply	Volume (24h)	% 1h	% 24h	% 7d
1	Bitcoin	BTC	\$117,775,478,239	\$6,939.67	16,971,337	\$4,424,620,000	0.61%	2.43%	-1.27%
2	Ethereum	ETH	\$41,555,984,406	\$420.80	98,754,012	\$1,329,400,000	0.62%	5.23%	9.17%
3	Ripple	XRP	\$19,497,453,892	\$0.498726	39,094,520,623 *	\$168,801,000	0.87%	2.31%	-2.30%
4	Bitcoin Cash	BCH	\$11,150,964,320	\$653.34	17,067,550	\$245,572,000	0.00%	2.18%	-1.28%
5	Litecoin	LTC	\$6,463,931,670	\$115.36	56,034,638	\$202,627,000	0.40%	1.55%	-4.45%
6	EOS	EOS	\$5,528,327,432	\$7.03	786,593,338 *	\$743,442,000	0.96%	17.32%	22.32%
7	Cardano	ADA	\$4,152,064,784	\$0.160144	25,927,070,538 *	\$59,084,000	2.17%	5.19%	0.43%
8	Stellar	XLM	\$3,791,467,417	\$0.204378	18,551,250,219 *	\$27,209,500	1.16%	2.58%	-3.92%
9	NEO	NEO	\$3,545,503,000	\$54.55	65,000,000 *	\$106,552,000	-0.11%	7.31%	12.60%
10	IOTA	MIOTA	\$2,897,465,753	\$1.04	2,779,530,283 *	\$20,919,600	0.74%	4.91%	3.44%
11	Monero	XMR	\$2,671,220,604	\$167.81	15,918,220	\$41,062,000	0.06%	1.54%	-4.58%
12	TRON	TRX	\$2,439,918,998	\$0.037110	65,748,111,645 *	\$254,155,000	0.27%	1.08%	19.55%
13	Dash	DASH	\$2,431,897,009	\$303.83	8,004,032	\$73,544,300	0.54%	1.86%	-3.30%
14	Tether	USDT	\$2,281,715,716	\$0.997628	2,287,140,814 *	\$1,474,840,000	0.08%	-0.17%	-0.34%
15	NEM	XEM	\$2,147,724,000	\$0.238636	8,999,999,999 *	\$13,420,400	1.52%	4.30%	2.03%
16	VeChain	VEN	\$1,433,421,130	\$2.73	524,770,505 *	\$67,364,800	-0.50%	3.34%	7.93%
17	Ethereum Classic	ETC	\$1,417,048,529	\$14.02	101,102,928	\$83,373,900	0.76%	3.69%	0.41%
18	Binance Coin	BNB	\$1,398,336,443	\$12.03	116,261,604 *	\$89,670,000	-0.01%	-0.90%	-2.44%
19	Verge	XVG	\$1,228,160,054	\$0.082635	14,862,414,170	\$216,410,000	-0.08%	-1.52%	31.70%

So, you've heard of **blockchain** and may think you know how it works...



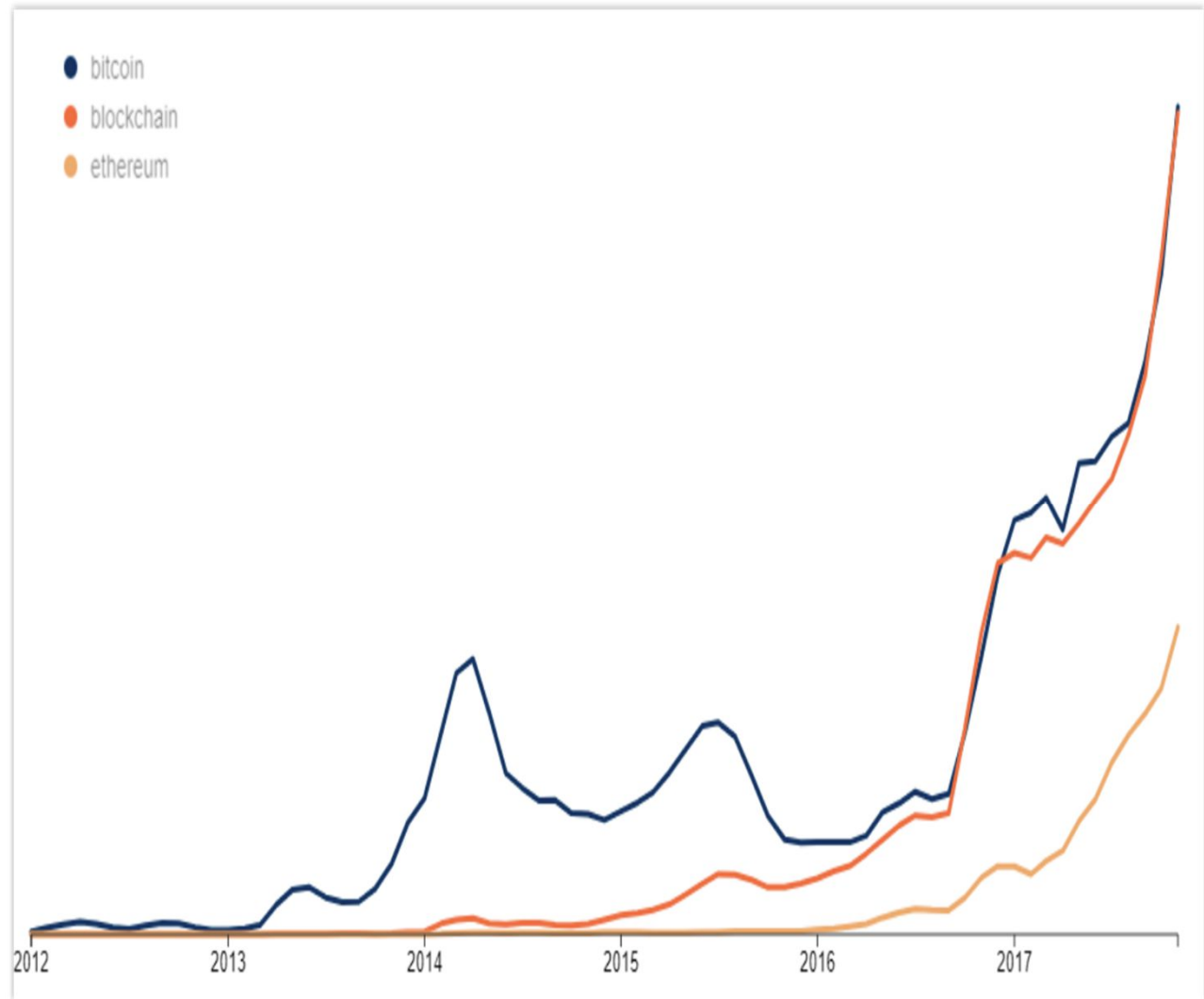
But I'm not here to talk about all that



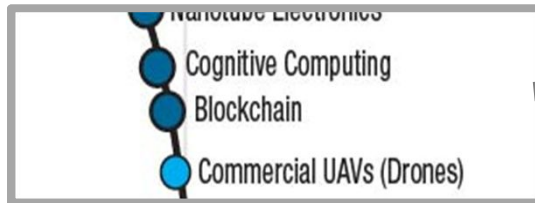
Blockchain media interest skyrockets

Blockchain
technology took
2017 by storm.

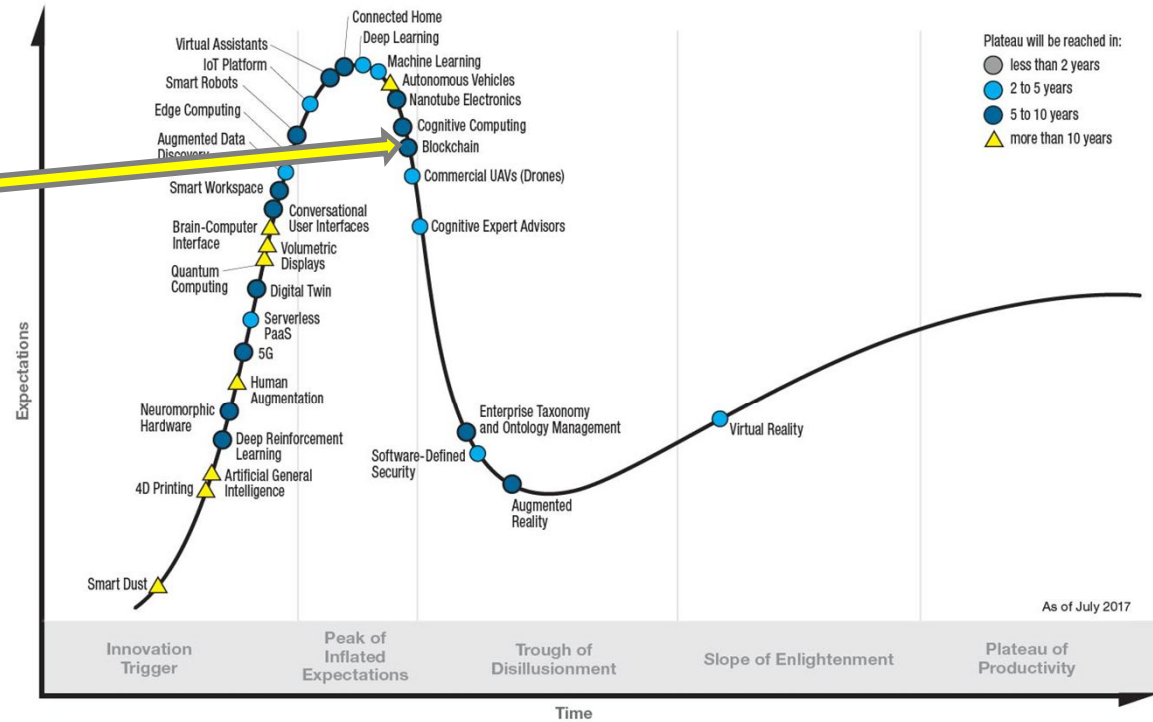
(CB Insights)



The Hype Cycle



Gartner Hype Cycle for Emerging Technologies, 2017



gartner.com/SmarterWithGartner

Source: Gartner (July 2017)
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Gartner



How Enterprise **blockchain** applied to business networks



Business Network benefit from connectivity

- Participants are costumers, suppliers, banks, partners
- Cross geography and regulatory boundary

Wealth is generated by the flow of the goods and services across business network in transactions and contracts

Markets are central to this process:

- Public (fruit market, car auction), or
- Private (supply chain financing, bonds)



Ledgers are key...

Ledger is the system of record for business. Businesses have multiple ledgers for multiple business networks

Transaction - an assets transfer onto or off the ledger

Contract – conditions for transaction to occur

SHEET NO. 1 ACCOUNT NO. 20

TERMS. Pay Barten 5⁰⁰ x 1⁰⁰ Wk NAME Jo Paints Yellow & Wife

RATING. 8⁰⁰ - 1⁵⁰ ADDRESS _____

CREDIT LIMIT. _____

DATE	ITEMS	Folio	DEBITS	DATE	ITEMS	Folio	CREDITS
Nov 20	Barten Contract		110 -	Nov 13	Salary	11	9.50
20	Strong Curie		11.50	13			3.5
12		11	4.50				11.50
			56 -				56 -
13	Btw Bal.		85 -	20	"	12	9.50
13	WAB "		11.50				3.0
20		12	4.50				11.50
20	Btw "		30 -	27		13	9.50
20	WAB "		11.50				2.0
27		13	4.50				11.50
27	Btw "		25 -	Dec 4		14	9.50
27	WAB "		11.50				2.0
Dec 4		14	4.50				11.50
4	Btw "		20 -	11		15	9.50
4	WAB "		11.50				1.0
11		15	7.75				10.75
11	Btw "		15 -	18		16	9.50
11	WAB "		14.75				10 -
							10.25
16	Btw "		10 -	20		17	9.50
18	WAB "		10.25				1.0
							5.75
			20.25				20.25



Introducing **Blockchain**





Blockchain is a **trusted, distributed** ledger which has a set of **shared business** processes across all the members of the business network



Types of Blockchain Networks

Public	<p>In a public blockchain anyone can read and write the data stored on the blockchain. Currently it is most commonly associated with cryptocurrencies.</p>	<p>high cost, slow speed, low trust, high decentralization</p>
Private	<p>In a private blockchain, permissions to write data onto the blockchain may be controlled by one organization that is highly trusted by the other members.</p>	<p>low cost, high speed, high trust, low decentralization</p>
Permissioned / Consortium	<p>A permissioned blockchain is a type of private blockchain where control is distributed across a predetermined number of members in the network.</p>	<p>moderate cost /speed/trust /decentralization</p>



Blockchain Platforms



HYPERLEDGER

 **bitcoin**



ethereum

 **Chain**

 **ripple**

IBM

r3.

ca
technologies

A Use Case: Before & After

The following shows today's **automobile leasing process**. Each party involved manages their own database and relies on regulators to oversee accuracy and establish trust. **Inefficient, expensive and vulnerable.**

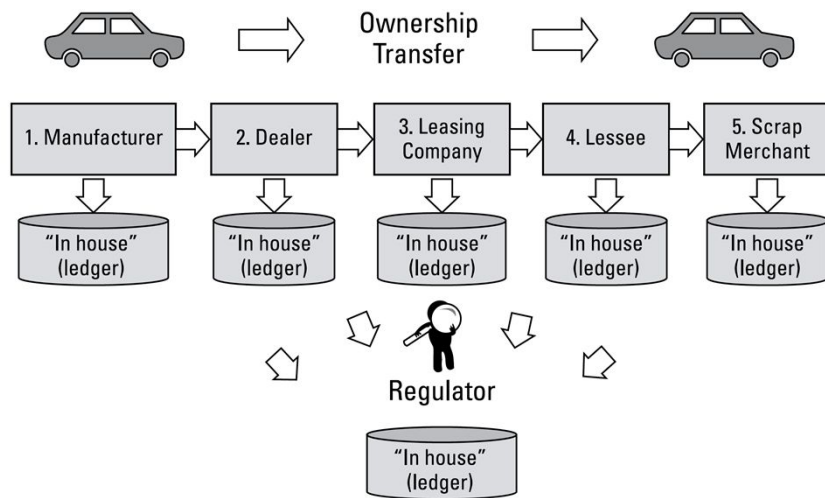


FIGURE 1-2: Tracking vehicle ownership without blockchain.

With blockchain, each party shares and validates the distributed ledger, while smart contracts automatically orchestrate the exchanges. **Consensus, provenance, immutability and finality.**

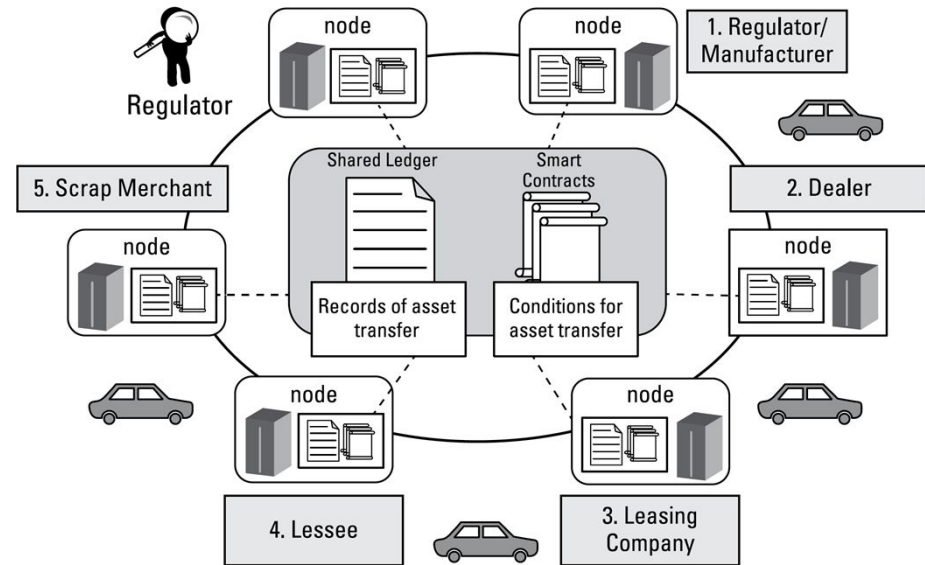


FIGURE 1-3: Tracking vehicle ownership with blockchain.



Example Use Cases





Deutsche Bank is part of a group of organisations that partnered with IBM on a block-chain-based shared Know Your Customer (KYC) proof-of-concept (POC). IBM announced the successful completion of the POC.

Other companies involved include HSBC, Mitsubishi UFJ Financial Group (MUFG) and the Treasuries of Cargill and IBM.





Successfully tested a pilot of Hyperledger Fabric's DLT, IBM's blockchain framework to quickly track food through the supply chain.

One immediate implication is for food-borne illnesses





Mining company BHP Billiton will use blockchain to record the movements of wellbore rock and fluid samples and better secure the real-time data.

BHP relies on vendors at nearly every stage in the mining process, contracting with geologists and shipping companies to collect samples and conduct analyses, with parties across continents.





Companies are using blockchain technology to allow users to control their own identities.

In a not-too-distant future, this might allow users to grant and revoke access on a case-by-case basis.



Enable patient-owned records, giving the patient control to grant and revoke data on an as-needed basis.

A single distributed EMR system could replace siloed data across different hospitals and medical facilities.

instantaneous insurance claims verification and fulfillment of prior authorization requests.

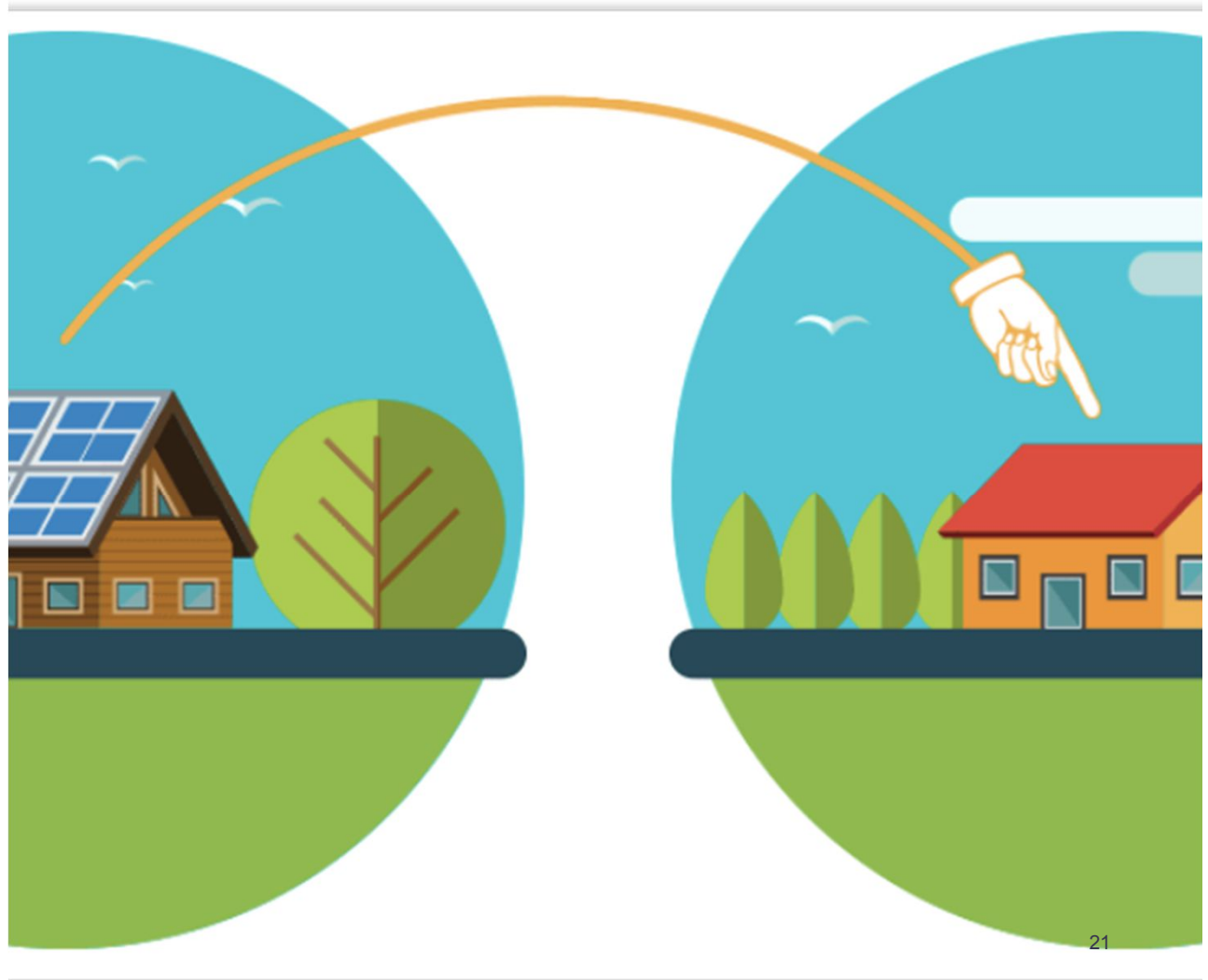




Working with Siemens to create a pilot microgrid in Brooklyn.

Aims to create a local, neighborhood-powered grid that could operate in parallel to the main grid.

In addition, authentication processes guarantee the confidentiality of user data.





Do **You** Need a **Blockchain?**



Quick Assessment Checklist

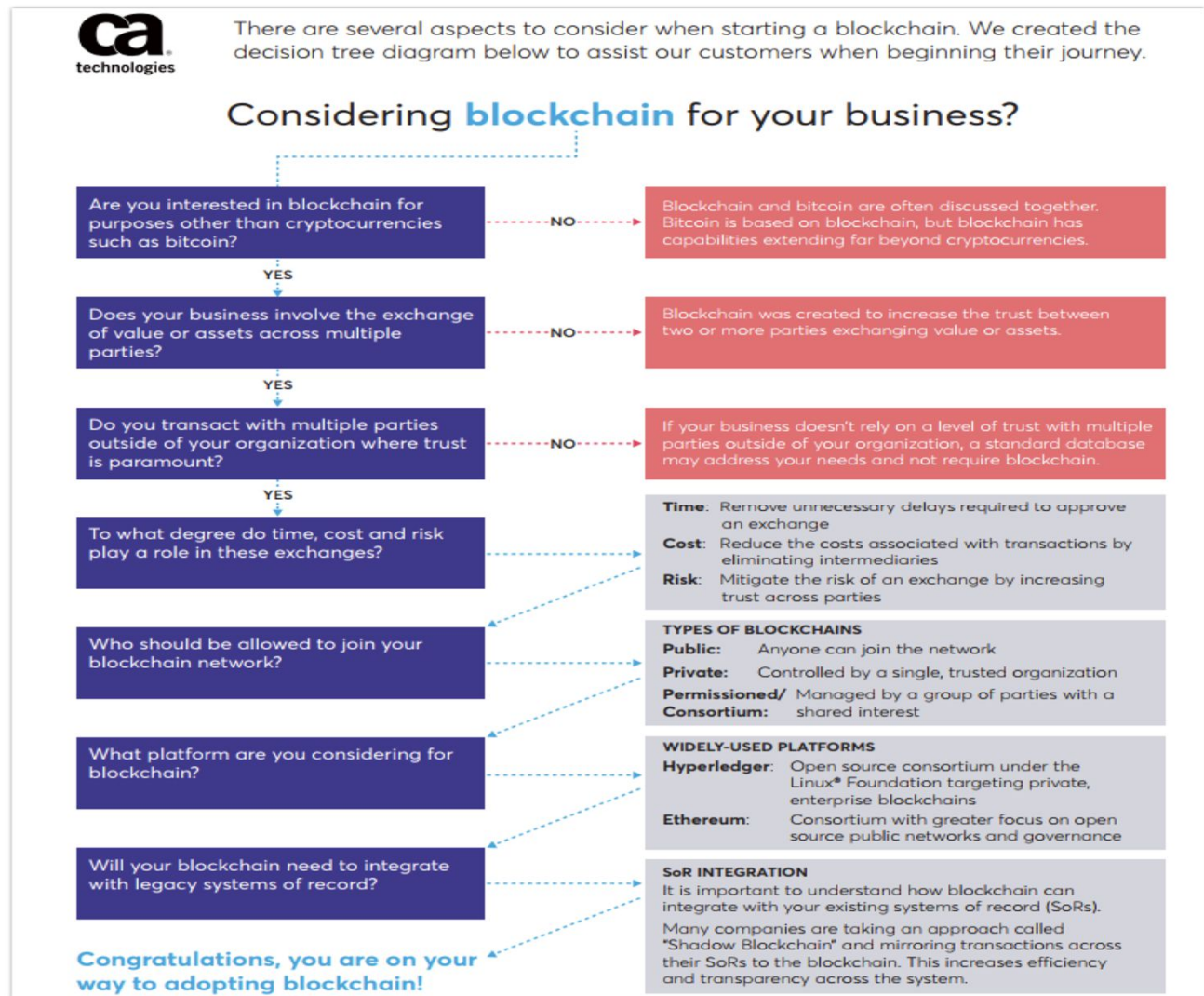
Is trust a critical factor between the parties exchanging value?	✓
Is visibility/tracking of transactions important to the business?	✓
Is the protection and security of transactions critical?	✓
Is time wasted on processes where human intervention is required?	✓
Is the cost of transactions (i.e. fees) a factor?	✓
Is a middleman/intermediary required by the current process?	✓

Answering 'Yes' to four or more of the questions above indicate there is potential value in adopting blockchain.



We created a decision tree to facilitate initial conversations with customers who may be considering Blockchain.

<https://www.ca.com/content/dam/ca/us/files/infographic/considering-blockchain-for-your-business.pdf>





Advancing **Blockchain Technology**

(and where CA can provide value)



What Our Customers are Asking

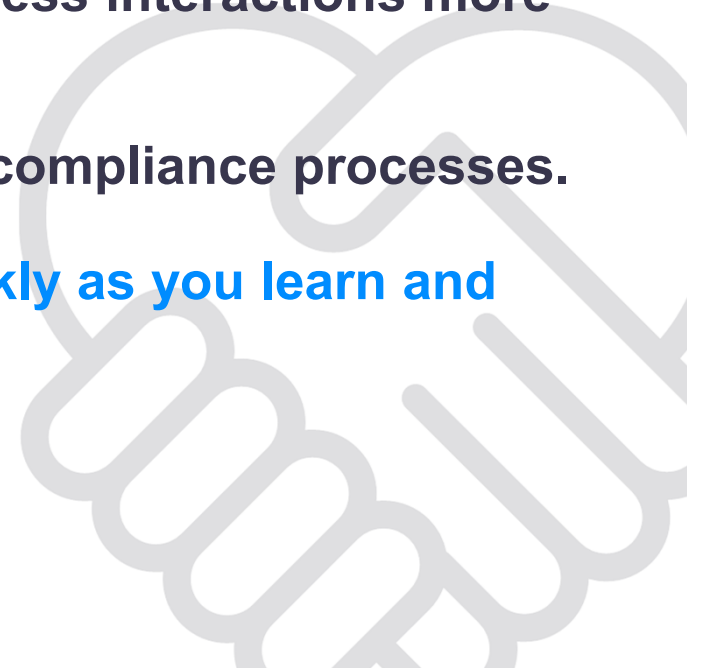
- 1 HOW WE CAN USE BLOCKCHAIN TO PROVIDE BUSINESS VALUE
- 2 HOW WE CAN EXPERIMENT WITH BLOCKCHAIN IN OUR ENVIRONMENT
- 3 HOW DO WE INTEGRATE BLOCKCHAIN WITH OUR EXISTING SYSTEMS
- 4 HOW WE CAN SECURE DATA ON LEDGER
- 5 HOW DO WE MONITOR PERFORMANCE ISSUES



Blockchain holds the promise to fundamentally transform how business is done, making business-to-business interactions more secure, transparent, and efficient...

This could immediately impact IT, legal and compliance processes.

Start small, prove awareness and grow quickly as you learn and adopt





Thank You.