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Nurturing Innovations - Fostering Business

How Blockchain Technology Affect BusinessPlatforms

Diving into the abyss of a hardly understood tech and learning its applications for the future

Author: Mr. Mohit Khuntia

Abstract

Never in market there was this much hype surrounding a subject that people hardly know much about. Even though more than a 1.4 billion dollar of venture capital has been already invested in blockchain technology according to a 2016 article published on World Economic Forum (Mcwaters, 2016) and there is still more to learn.

This white paper focus on background study of blockchain, its potential application on case by case basis and how can it transform the way we do business today. Its outcomes and implications on existing industries have also been discussed and how will it change the paradigm of the future tech landscape.

Introduction

Every new development in the field of technology creates disruption making the past technological standards obsolete and those who still use it, is just for the nostalgia (Bodkin, 2005) factor or lack of platform alternatives (Warren, 2015).

Blockchain, is an online record-keeping innovation that will change how we conduct business

It is a mutual, trusted, public record of exchanges, that everybody can investigate however no single client controls it. It is also crypto-graphed, secure, and tamper resistant that cannot be re-circulated.

It takes care of a complex numerical algorithm to exist. A blockchain is the ideal place to store, identification, contracts, property rights, certifications, and so forth. When you put something like a bitcoin into it, it will remain there until the end of time. It is decentralized, cost effective and anonymous.

Furthermore, that is the founding principle of Blockchain that it is a recordkeeping framework that monitors any kind of exchange between two parties, yet the records themselves are disseminated over any invested party that approaches those.

Following are five standards on which the technology is based on:

Appropriated Database: Each party on a blockchain approaches access to the whole database and its total history. No single gathering controls the information or the data. Each gathering can extremely the records of its exchange accomplices straightforwardly, without a mediator.

Peer to peer exchange: Correspondence happens straightforwardly between peers rather than through a central node. Every node stores and then forwards the data to other nodes.

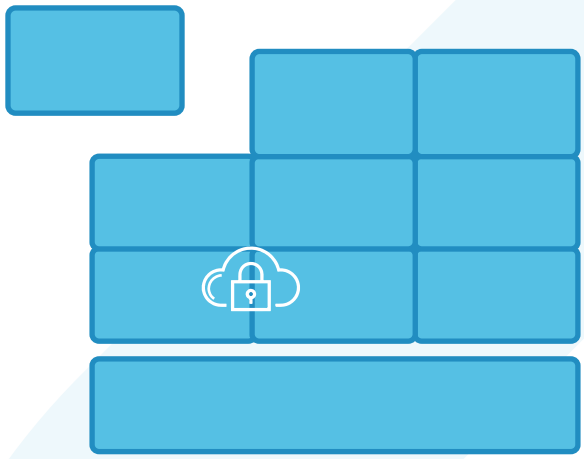
Straightforwardness with Pseudonymity: Each exchange and its related transaction is visible to anybody with access to the framework. Every node, or client on a blockchain has a one of a kind 30 or more alphanumeric address that distinguishes it. Clients can stay anonymous or give verification of their identity to other users. Exchanges happen between blockchain addresses.

Irreversibility of Records: Once an exchange is happens in the database and the records are updated, the records can't be changed, on the grounds that they're connected to each exchange record that preceded them therefore the term chain is used. Different computational calculations and methodologies are sent to guarantee that the recording on the database is perpetual, sequentially requested, and accessible to all other on the system.

Computational Rationale: The digital nature of the record implies that blockchain exchanges can be attached to the computational rationale and be fundamentally programmed. So clients can set up algorithms and set of set of rules that consequently generate exchange between network nodes.

New Block get added at even time intervals

Network Stores all Inforamtion in data piece called block

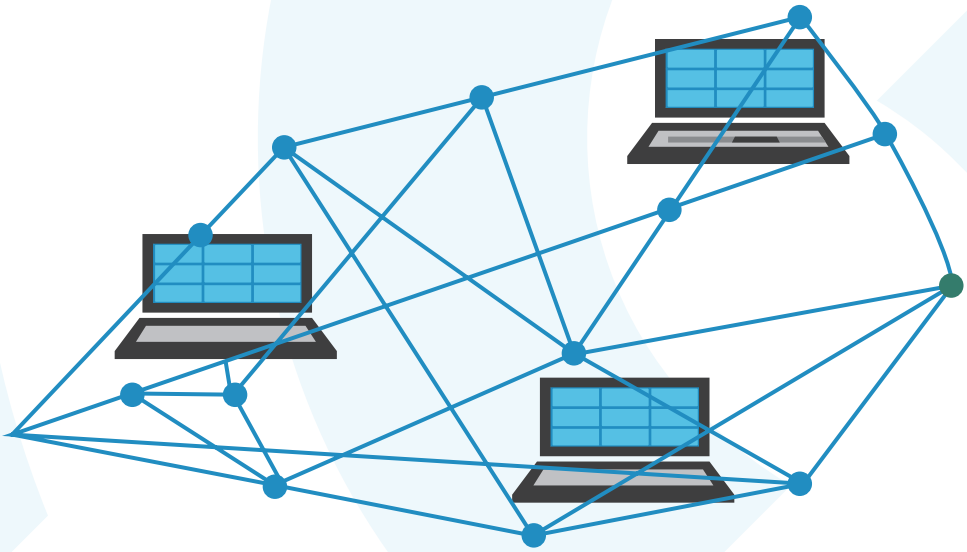


Each block has a limited sotrage capacity

Block store information of previous blocks, therefore they are chained in a cryptography manner

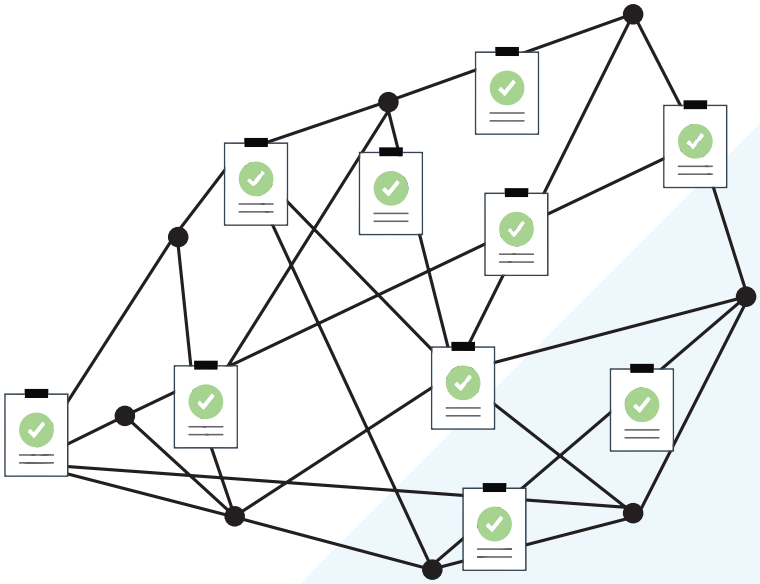
The first block in the chain is called the Genesis Block

Why is it called Blockchain?

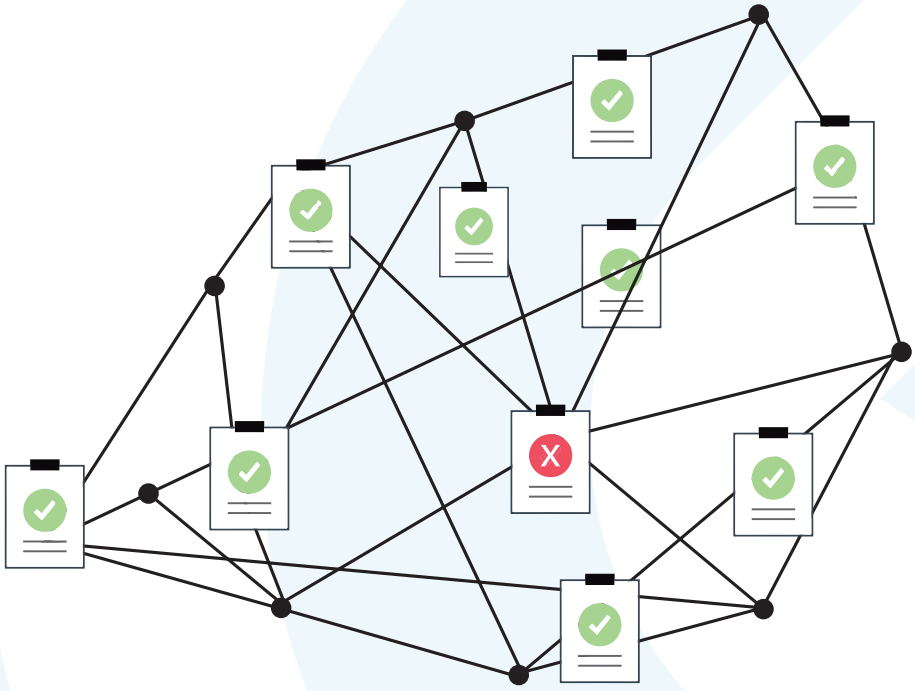


Each node on the network stores a copy of the entire blockchain

Peer to peer network



As each network user keeps a copy of the entire blockchain. Every new transaction can be verified by all the peers in the network. In the case where the majority agrees the transaction is approved as valid.



Why is it tamper proof?

In a case where a third party tries to tamper and make changes to his copy of the blockchain on his device, other user in the network will not approve of the transaction as it will not match with their blockchain data set. Therefore making blockchain more secure.

Blockchain Application

SMART CONTRACTS
Digital documents with proof of transfer

SMART PROPERTY
Digital registered property

DECENTRALIZED IoT & INTERNET
More secure and decentralized IoT device Platform and a internet without DNS making it more privacy focused and safe.

HEALTH RECORDS
Patient records kept in a secure decentralized way

DIGITAL PIRACY PROTECTION
Allow original content creators to sell directly to buyers, in a platform that will not validate redistribution without, creator's consent.

SECURE E-VOTING
Allowing a more secure, tamper proof & anonymous voting platform

SECURE COMMUNICATION
Allow to create a platform that is surveillance proof and authenticated. This could in both defence and civil applications

STOCK TRADING
Online trading platform

CROSS BORDER TRANSACTION

Correspondence Banking

Business to Business

Peer to Peer

Financial Services

Traditional frameworks have a tendency to be unwieldy, mistake inclined and very slow. Intermediaries are often expected to intervene the procedure and resolve clashes. This costs capital, time and stress. In comparison, users will find blockchain to be less expensive, more straightforward, and more successful. There is now a growth in number of financial service providers who are utilizing this framework to present advancements, for example, smart contracts or securities. The previous naturally pays bondholders their coupons once certain prearranged terms are met. The last are digital contracts that self execute and update automatically, when the terms are met.

Examples of blockchain financial services

Resource Management: Trade process and Settlement

Conventional trading process forms where parties trade and and manage capital this can be costly and unsafe, especially with regards to cross border exchanges. Each party simultaneously, for example, broker, caretaker, or the settlement supervisor, keeps their own particular records which could lead to human error and thereby lead to inefficiencies. The blockchain ledger decreases these foreseeable errors by encoding the records. In the meantime, the ledger streamlines the procedure, while crossing out the requirement between intermediaries.

Insurance: Claim processing

Claim handling can be a baffling and unpleasant arrangement. Insurance processors need to swim through false claims, divided information sources, or surrendered arrangements for clients to handle these forms physically. There is high probability of human error. But with the help of blockchain, an ideal framework can be created to implement transparency and risk free administration. Its encryption properties enable insurance firms to grab the ownership of asset to be insured

Payments: Cross Border Payments

The worldwide payment area is mistake i nclined, expensive, and open to illegal tax avoidance and money laundering. It takes days if not longer for cash to cross the world. The blockchain is as of now furnishing arrangements with payment organizations, which offer end-to-end blockchain fueled settlement administrations. In 2016, Santander became one of the primary banks to implement blockchain to its payment app under staff trial to make global installments 24 hours per day within the region of 24 EU countries and USA only (Oscar Williams Grut , 2016).

Smart Property

A movable or immovable property, for example, autos, houses, or cookers, from one perspective, or licenses, patents or organization shares, on the other, can have smart innovation implanted in them. Such enrollment can be put away on the ledger alongside authoritative subtle elements of other people who are permitted possession in this property. Smart keys could be utilized to encourage access to the allowed party. The ledger stores and permits the trading of these smart keys once the contract is verified.

The decentralized ledger likewise turns into a framework for recording and overseeing property rights and in addition empowering the smart contracts to be copied if records or the smart key is lost.

Making property smart reduces dangers of running into extortion, intervention expenses, and unsound business circumstances. In the meantime, it builds trust and effectiveness.

Examples of Blockchain Smart Property.

Non Conventional money lending

Smart contracts can reform the customary loaning framework. For example, unconventional cash banks like hard cash banks benefit borrowers who have poor credit ratings with requirement for loans while charging 2 to 10 percent of the loan and taking their property as insurance. An excessive number of borrowers fall into liquidation and lose their homes. Blockchain can undermine this by enabling an outsider to credit you cash and taking your smart property as insurance. No compelling reason to demonstrate the loan specialist credit or work history. No compelling reason to physically handle the various reports. The property's encoded on the blockchain for all to see.

Your auto/cell phone

Conventional type of smart property still exists. Take for example your car keys, might be furnished with an immobilizer, where the car can only be opened once you tap the correct button on the key is pressed. Your cell phone too will unlock once you write in the correct lock screen code. Both work on cryptography to secure your possession.

The issue with primitive types of smart property is that the key is normally held in a physical holder, for example, the auto key or SIM card, and can't be effortlessly exchanged or duplicated. The blockchain ledger takes care of this issue by enabling blockchain miners to restore and repeat a lost procedure.

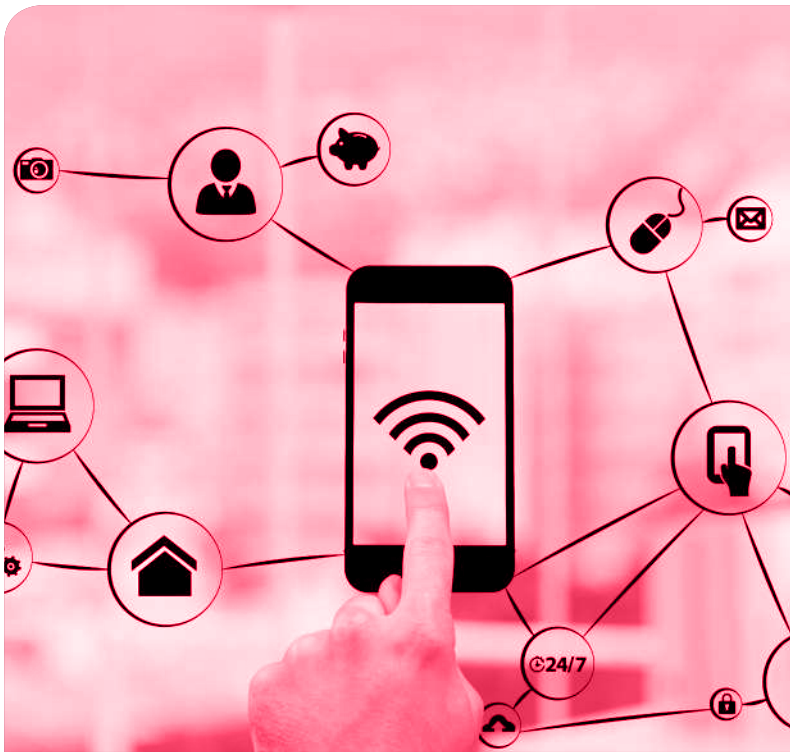
Blockchain and (IoT)

A smart appliance is a gadget that interfaces with the internet and gives you more data and control than conventional counterparts.

For example, a code associated with your machine can be connected to the internet and caution you when your casserole is fully prepared or if the dishes are done. These notifications keep your appliances in great condition, they spare you cash in regards to vitality productivity and enable you to control your gadgets when far from home. Encoding these appliances on the blockchain secures your possession and empowers transferability.

Inventory network Sensors

Sensors give organizations complete start to end oversight of their inventory network by giving information on the area and state of the provisions as they are transported the world over. Blockchain stores, oversees, ensures and exchanges this smart data whereby smart contracts can be implemented to reduce paper work and errors.



Smart contracts are digital in nature which have “if this then that” code embedded in them, that gives them self-execution. In actuality, a middle person guarantees that all parties complete on terms. The blockchain forgoes the requirement for third party, as well as guarantees that all ledger members know the agreement points of interest and those authoritative terms execute naturally once conditions are met. One can utilize smart

contracts for all kind of circumstances, for example, money related subsidiaries, insurance premiums and crowd funding, among others.

Examples of Blockchain Smart Contracts

Blockchain Health care

Individual wellbeing records could be encoded and put away on the blockchain with a private key which would allow get to just to particular people. A similar system could be utilized to guarantee that examination is led in a safe and confidential way. Receipts of surgeries could be put away on a blockchain and the insurance providers be automatically notified as which becomes a proof of delivery. The ledger, as well, could be utilized for general medicinal services administration, for example, directing medications, results of tests, regulatory compliance and overseeing healthcare supplies.

Blockchain music

The main issues in the music business are to ownership rights, transparency and distribution of royalty. Since the digital music industry concentrates on money making, while artist rights are often neglected. Application of blockchain and smart contracts can curtail this issue by making a far reaching and exact decentralized database of music rights. In the meantime, the ledger and give straightforward transmission of artist royalties in real time for all the artists involved with their respective labels. Artists would be paid with advanced cash as indicated by the predefined terms of their contract.

Blockchain Government

Computer scientists say hackers can rig the electronic system to control votes. The ledger would help to avoid this as all the votes would be stored in a encrypted format. Private individuals can affirm that their votes were counted and affirm who they voted in favor of. The system saves cash, coincidentally, for the administration, as well.

The blockchain record, also, provides a stage for what we call Open Information openly accessible government-sourced information that is accessible over the web to all citizens.

Startups can use this information to reveal false schemes, farmers can use it to perform precision cultivation, and parents can investigate the side effects of drug for their sick kids. Right now, this information is released just once per year and is, to a great extent, non-responsive to citizens. The blockchain, as an open record, can open this information to citizens at whatever point and wherever they need.

Examples of Blockchain Government

Community and Public value

The blockchain can aid self organization by giving a self administration platform to companies, NGOs, foundations, government agencies, academics, and individual citizens. Parties can connect and trade data on a worldwide and transparent scale similar to drop box but more scaled up version and less risky.

Vested responsibility

Smart contracts can ensure that electorates can be chosen by the people for the people so that administration is what it's intended to be. The contracts specify the electorate's expectations and electors will get paid just once they do what the electorate requested as opposed to what funders desired.

Blockchain Personal Identification

In any case, online companies thoroughly understand us. Some companies whom we purchase from sell our character details to advertisers who send you their ads. The blockchain blocks this by making a secured information point where you encode just the data that you need significant individuals to know at specific times. For instance, in case you're heading off to a Restaurant where you have booked a table, the receptionist simply needs the data that tells him you are the person you say you are.

The blockchain protects your personality by encoding it and securing it from spammers and marketers.

Examples of Blockchain Identity:

Passports

The first computerized passport allows owners to identify themselves on the web and off. The user has to take a photo of himself, stamp it with an open and private key, both of which are encoded to demonstrate it is legitimate. The passport is then stored on ledger, given a Bitcoin address with an open IP, and affirmed by Blockchain users.

Birth, Death and Wedding certificates

No official document may be as import as the one's showing you're birth, marriage or passing on which open your rights to a wide range of privileges (such as voting, working, citizenship), yet mismanagement is very high. According to a UNICEF report almost one third of children aged under five do have a birth certificate. The blockchain could make record-keeping more dependable by encrypting birth and death certification, thereby empowering citizens their right to access this information.

Personal Identification

We use a many identification credentials like our driver's license, computer password, credit cards, keys, social security ID, etc. Blockchain ID is a computerized type of ID that is built to supersede every one of these forms of physical recognizable proof.

As Blockchain technology becomes more wide spread, in the near future a user will have the capacity to use the one advanced ID for signing up at any registrar. It is open source, secured by the blockchain, and ensured by a ledger of transparent record.

Numbers

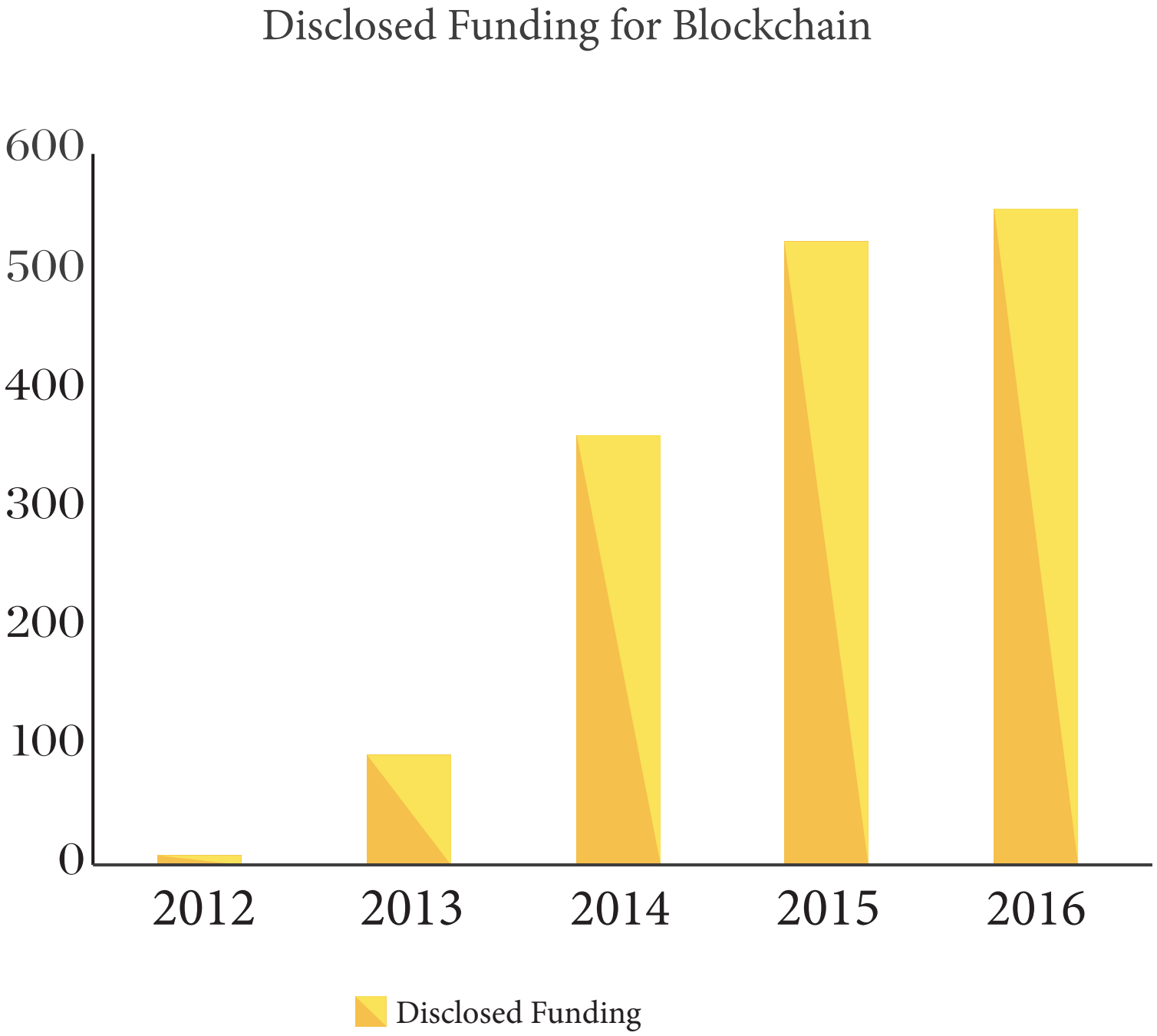
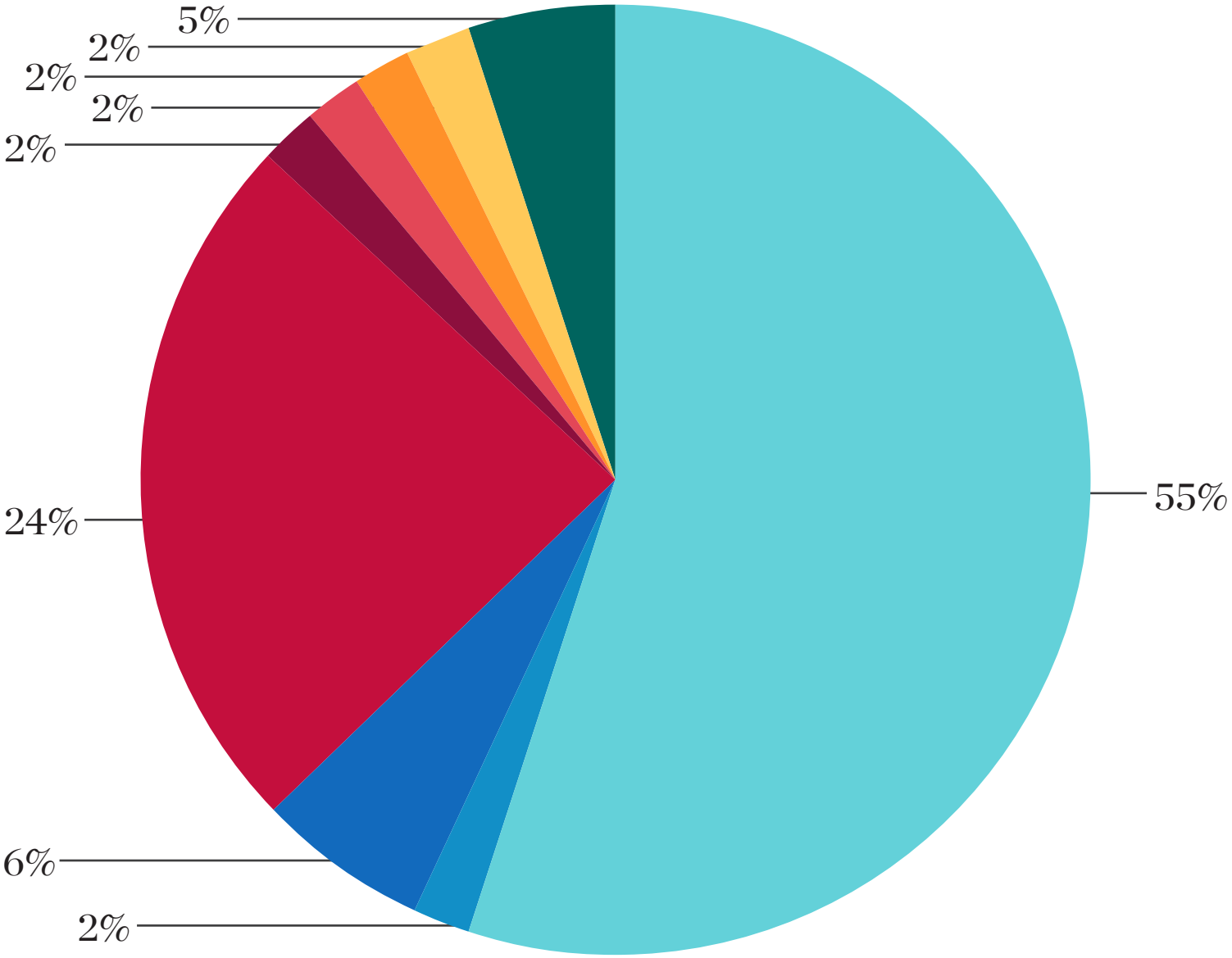


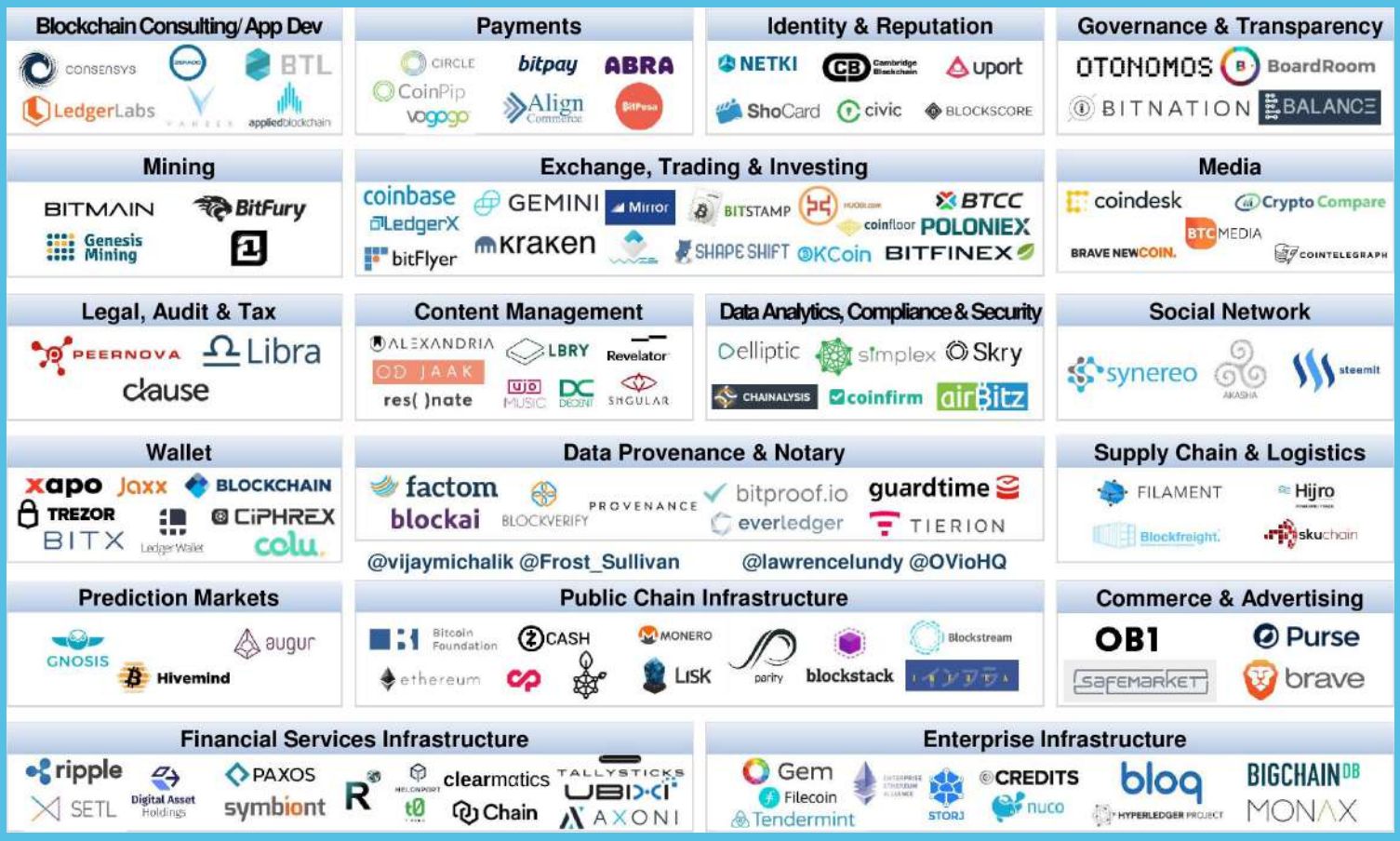
Figure 1: Value in Million Dollars

Blockchain Investment In Countries



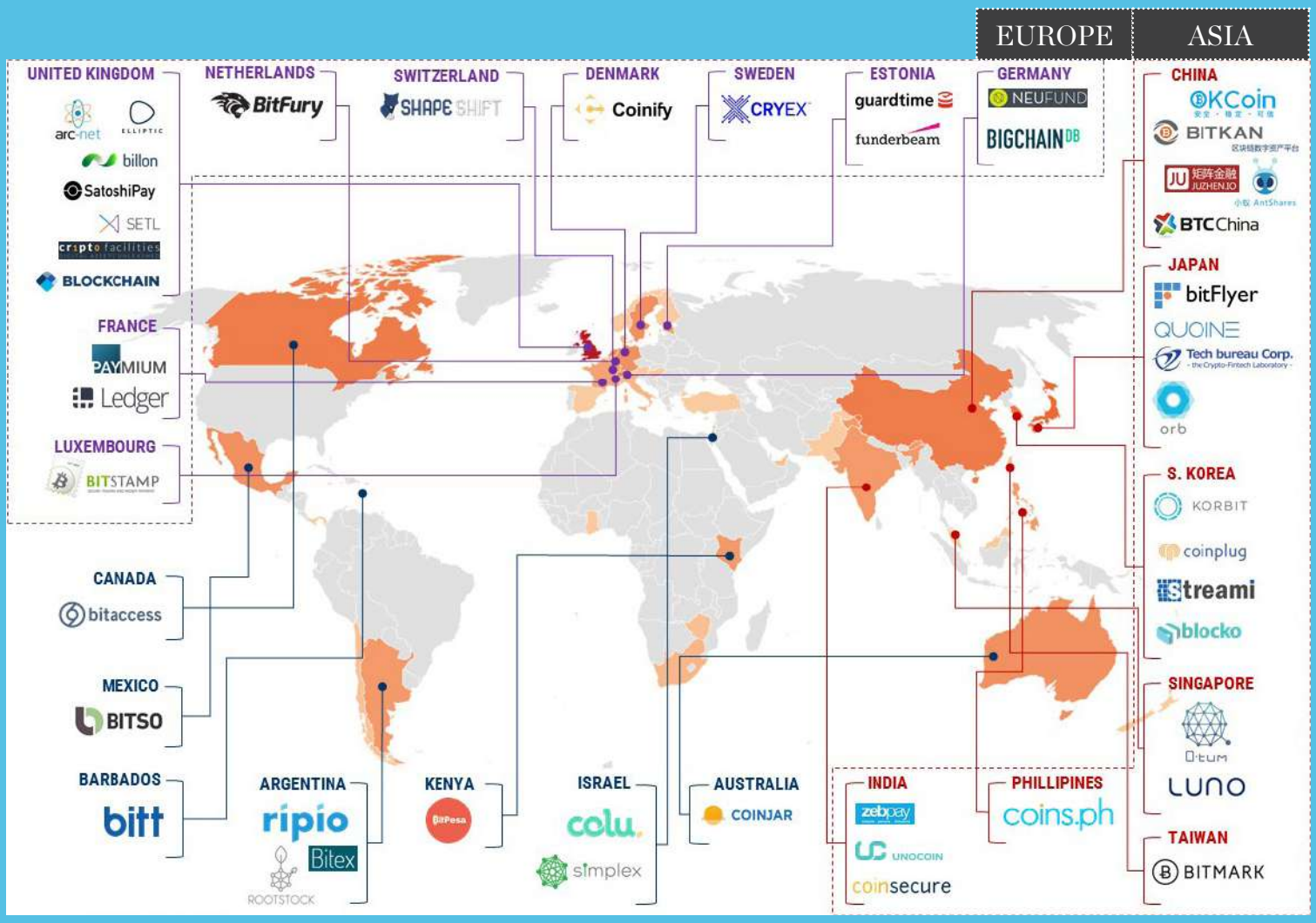
United States
Canada
Singapore
United Kingdom
Israel
Japan
South Korea
India
Others

Blockchain startups



Data by Frost and Sullivan

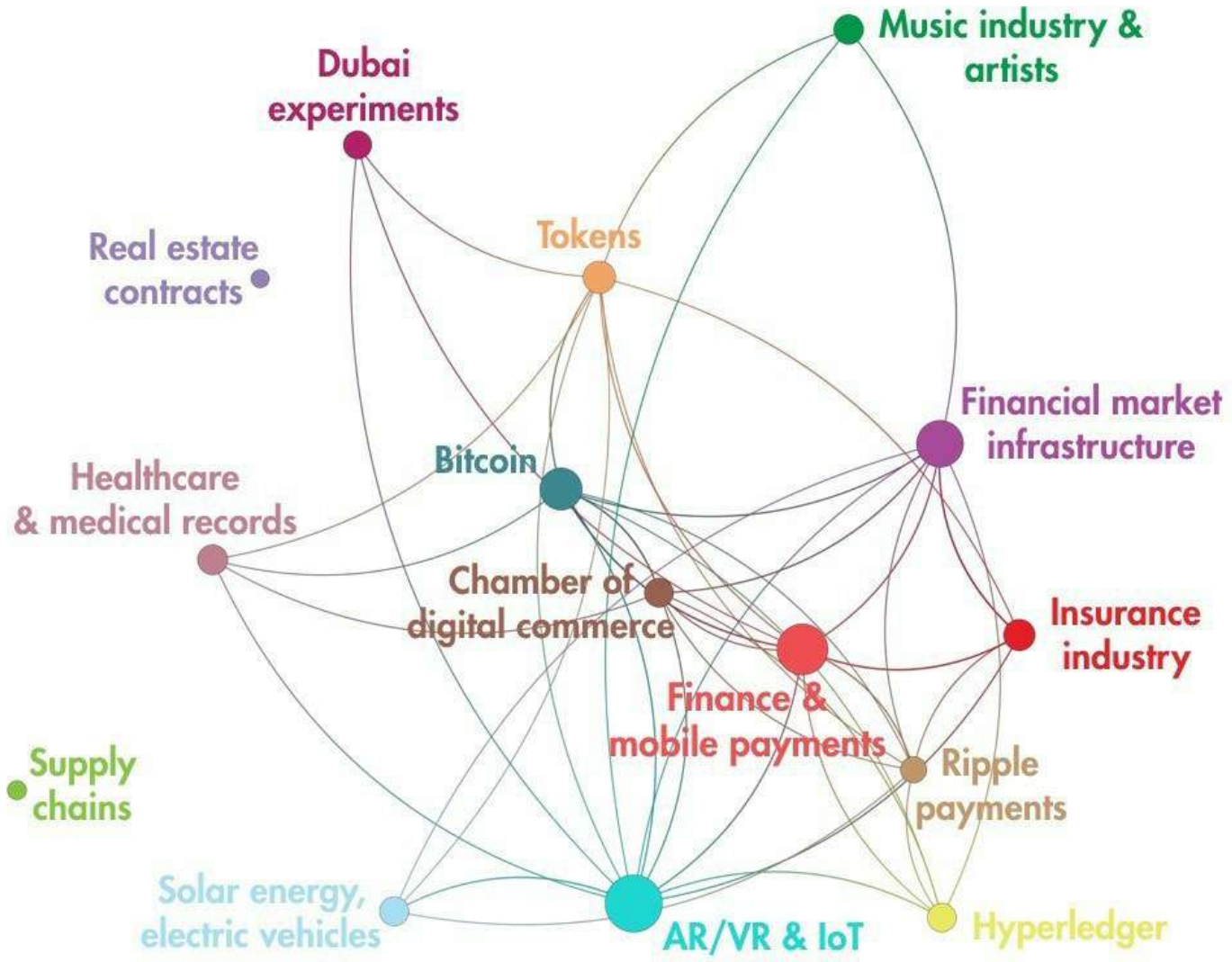
Global companies based on blockchain technology



Data Source CB-insights

What the future holds for blockchain technology

Future for blockchain technology is promising; it will streamline most of the processes and reduce costs substantially by completely removing the function of intermediaries from the service equation. Who would not love to get cell-phone network without the hassle of the network providers.



A Quid network map below shows the co-relation between “blockchain and future” to see what the future of blockchain looks like than the present (McCuan, 2017).

“A Quid network shows 1,675 stories about the future of blockchain, from global news sources between 20 April 2016 and 20 April 2017.” (McCuan, 2017)

In the connected network view we can see that there are some prominent differences the adoption of blockchain outside the financial sector. We can notice that blockchain’s future steers more towards the music and arts sector where this technology would help the creators to protect and secure their work’s copyright.

Further down the road as adaptability of this technology increases it will play a bigger role in health care, insurance, renewable energy and medical records as well secure communication for civil and defense purposes.

Conclusion

With every new development in technology organizations must adapt or risk falling behind the competition curve, taking into consideration with more than billions already invested by Venture Capitalists (Lakhani, 2017) in the technology. From the idea of a public ledger that is decentralized and stores each transaction data in cryptographic chain form the application for it is limitless.

It is high time for organizations and managers to invest and test the field of blockchain and what can be achieved with this revolutionary technology. It ends digital piracy, which was the biggest down side of the internet. It gives a new hope for music and digital artists by letting them sell directly in a more secure platform. It brings an end to service intermediates; it changes how we transfer funds without banks, it reduces the cost of contracts as no more lawyers would be required in the process, it reduces the cost of logistics due to smart contracts. It will change the how we connect to the internet without the DNS making it more decentralized. This is why even very traditional institutions like banks were the first ones to accept this technology.

Organizations and businesses could either leapfrog to the next generation on business platform or being left behind in the last generation of accepted platform technology standards.

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For more details contact us:
info@ingeniousebrainsolutions.com
services@ingeniousebrainsolutions.com

Ingenious e-Brain Solutions Pvt. Ltd.
4 Heinrick Way Bridgewater
NJ 08807, New Jersey, USA
Phone: +1 347 480 2054, +1 408 7017314