منتدى دبي العالمي لإدارة المشاريع

DUBAI INTERNATIONAL PROJECT MANAGEMENT FORUM

PARALLEL SESSION STREAM

Blockchain in Project Management

Why Blockchain is a Game Changer for Project Management

Towards the Future

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Project Management Consultant
Link Technologies

Blockchain in Project Management

Image by Reto Scheiwiller from Pixabay

Session Objective

This session aims to explain the concept of Blockchain as implemented in Project Management.

If you are totally new to the concept or just wanting to know more about Blockchain this session will be useful.

You will learn how implementing a Blockchain-based project lowers risk, saves time, and offers cost savings.

Session Agenda

- Importance of Blockchain
- Understanding Blockchain
- Basic Components of Blockchain
- Blockchain Integration into Project Management
- Resources

The Importance of Blockchain

Fourth Industrial Revolution

We live in a time of merging of technologies such as artificial intelligence, robotics and **blockchain**

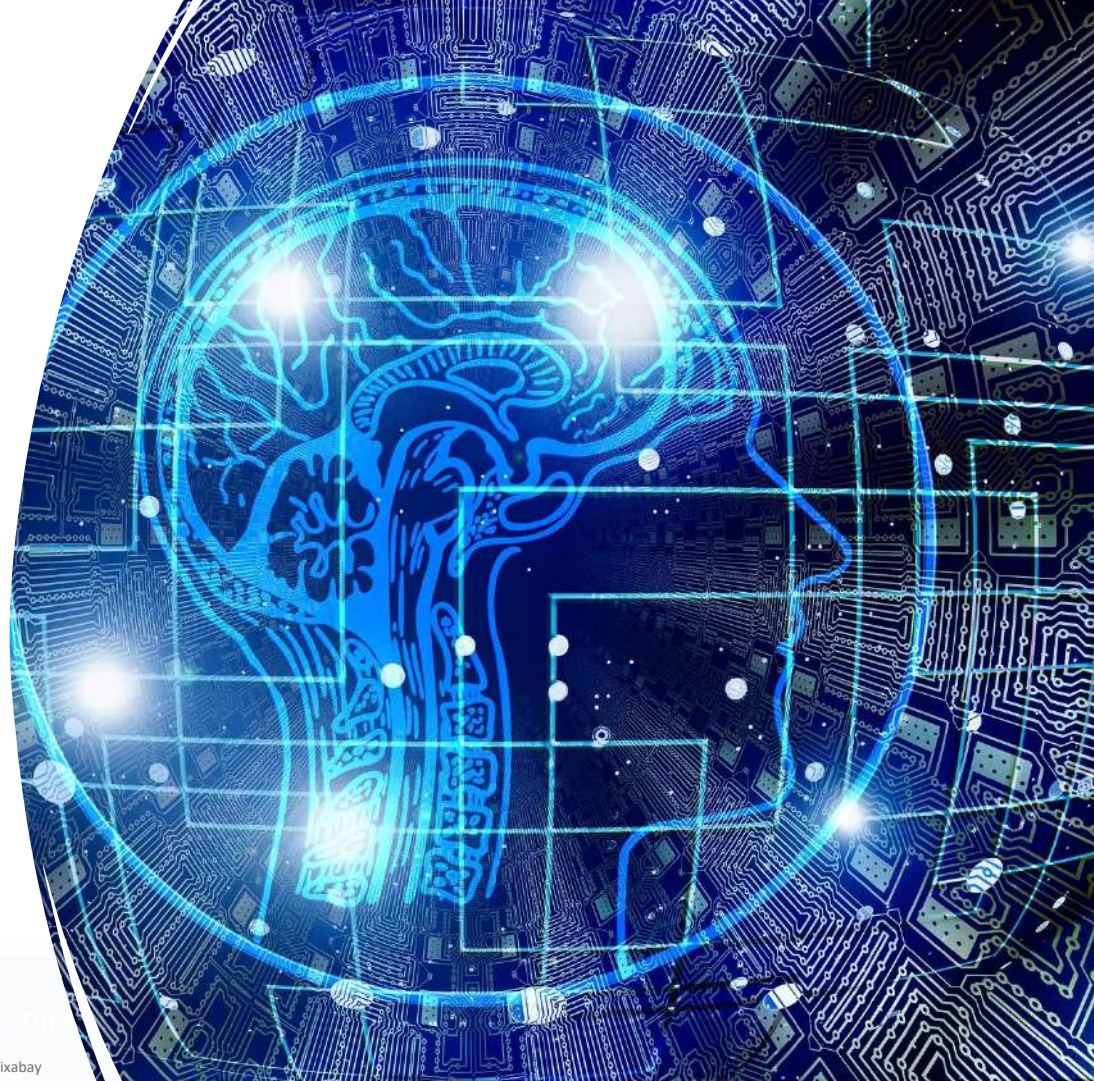


Image by Gerd Altmann from Pixabay

50+ BLOCKCHAIN
REAL WORLD USES CASES

GOVERNMENT

Essentia develops world's first blockchain solution to manage international logistics hub together with Traffic Labs and the Finnish Government

essentia.one

IDENTIFICATION

Voter registration is being facilitated via a blockchain project in Switzerland spearheaded by **Uport**.

uport

MOBILE PAYMENTS

The blockchain ledger that **Ripple** uses has been latched onto by a group of Japanese banks, who will be using it for quick mobile payments.

ripple

INSURANCE

A smart contract-based blockchain is being used by Insurer **American International Group Inc** as a means of saving costs and increasing transparency.

AIG

ENDANGERED SPECIES PROTECTION

The protection of endangered species is being facilitated via a blockchain project that records the activities of these rare animals.

BORDER CONTROL

Essentia has devised a border control system that would use blockchain to store passenger data in the Netherlands.

essentia.one

SUPPLY CHAINS

IBM and **Walmart** have partnered in China to create a blockchain project that will monitor food safety.

IBM Walmart

HEALTHCARE

A number of healthcare systems that store data on the blockchain have been pioneered including **MedRec**.

MEDREC

SHIPPING

Shipping is a natural fit for blockchain,

ENERGY

Essentia is developing a test project that will help energy suppliers track the distribution of their resources in real time, whilst maintaining data confidentiality.

essentia.one

LAND REGISTRY

Land registry titles are now being stored on the blockchain in Georgia in a project developed by the **National Agency of Public Registry**.

NATIONAL AGENCY of PUBLIC REGISTRY

COMPUTATION

Digital Currency Group are helping Amazon Web Services examine ways in which the

BORDER CONTROL

Essentia is developing a blockchain project for border control that will allow customs agents to record passenger data from an array of inputs and safely store it.

essentia.one

JOURNALISM

Decentralized journalism, as enabled by blockchain technology, has the potential to prevent censorship and increase transparency, as **Civil** has shown.

CIVIL

WASTE MANAGEMENT

Waltonchain is using **RFID**

DIAMONDS

The **De Beers Group** is using blockchain to track the importation and sale of diamonds.

DE BEERS

FINE ART

By storing **certificates** of authenticity on the blockchain, it's possible to dramatically reduce art forgeries, as one blockchain project is proving.

NATIONAL SECURITY

For the past two years, the **US Department of Homeland Security** has been using

TAXATION

In China, a tax-based initiative is using blockchain to store tax records and electronic invoices led by **Miaocai Network**.

ENERGY

Chile's National Energy Commission has started using blockchain technology as a way of certifying data pertaining to the country's energy usage as it seeks to update its electrical infrastructure.

CNE COMISIÓN NACIONAL DE ENERGÍA

RAILWAYS

Russian rail operator **Novotrans** is storing inventory data on a blockchain pertaining to repair requests and rolling stock

НОВОТРАНС

ENTERPRISE

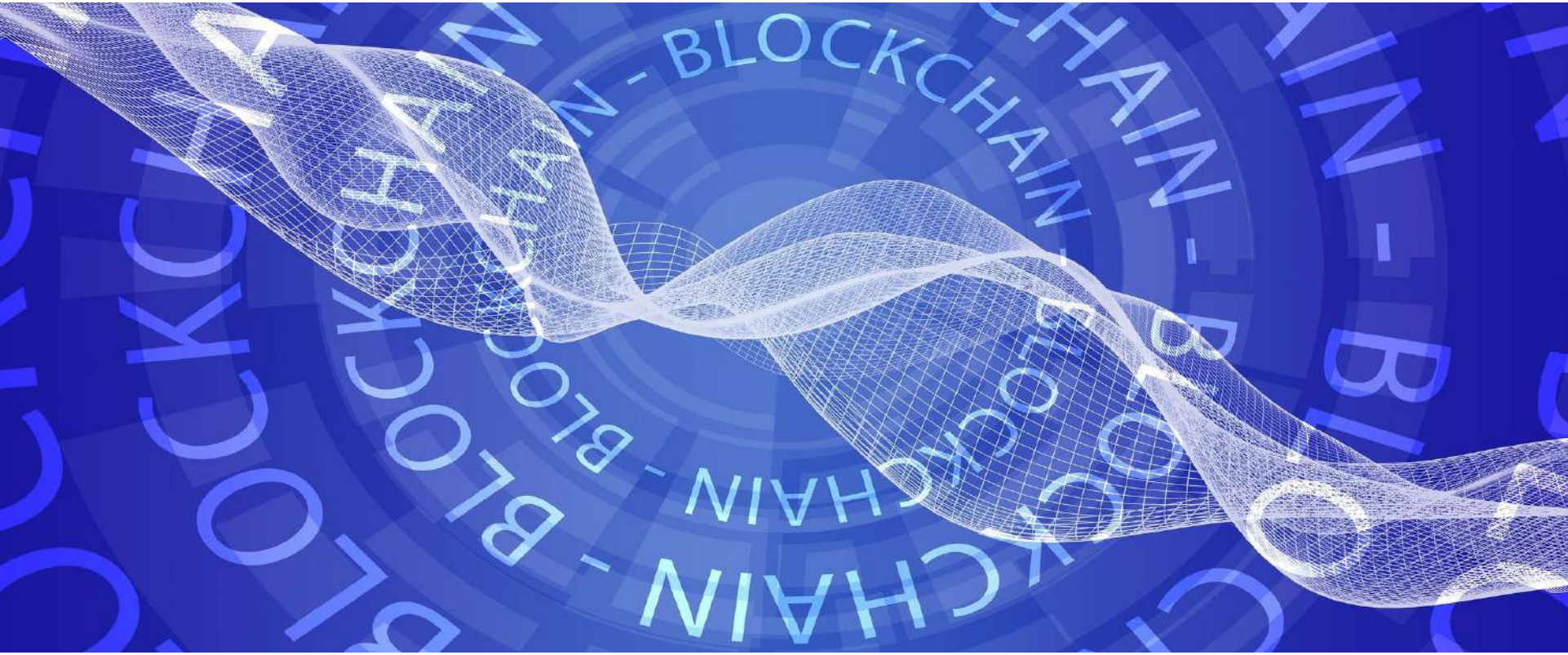
Google is building its own blockchain which will be integrated into its cloud-based services, enabling businesses to store data on it, and to request their own white label version developed by **Alphabet Inc**

Google Alphabet

MUSIC

Arbit is a blockchain-based project led by former Guns N Roses drummer Matt

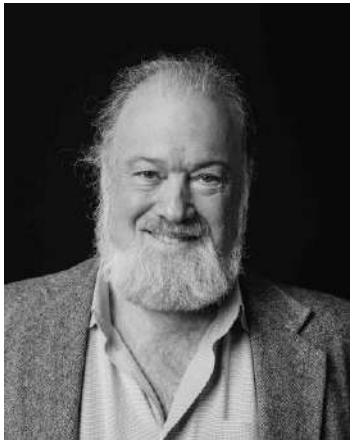
Understanding Blockchain

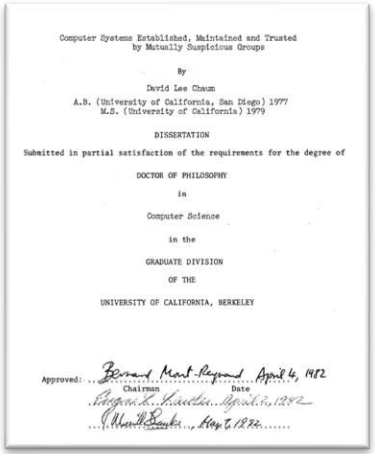


Blockchain is Not Bitcoin

Blockchain is the underlying technology beneath Bitcoin

Beginnings of the First Blockchain





Computer Systems Established, Maintained and Trusted
by Mutually Suspicious Groups

By

David Lee Chaum

A.B. (University of California, San Diego) 1977
M.S. (University of California) 1979

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Computer Science

in the

GRADUATE DIVISION

OF THE

UNIVERSITY OF CALIFORNIA, BERKELEY

Approved: Chairman Date April 4, 1982

June of 1982 David Chaum proposed Blockchain protocol in his dissertation

"Computer Systems Established, Maintained, and Trusted by Mutually Suspicious Groups"

1991 Stuart Haber and W. Scott Stornetta created the first operational Blockchain

Blockchain Timeline

October 2008
Bitcoin is introduced as the first application of blockchain

November 2010
First Bitcoin purchase is made – 10,000 BTC for a pizza (equal to ~$43M today)

March 2013
Bitcoin market cap exceeds $1B

December 2013
Ethereum Project is launched to provide a platform for decentralized applications

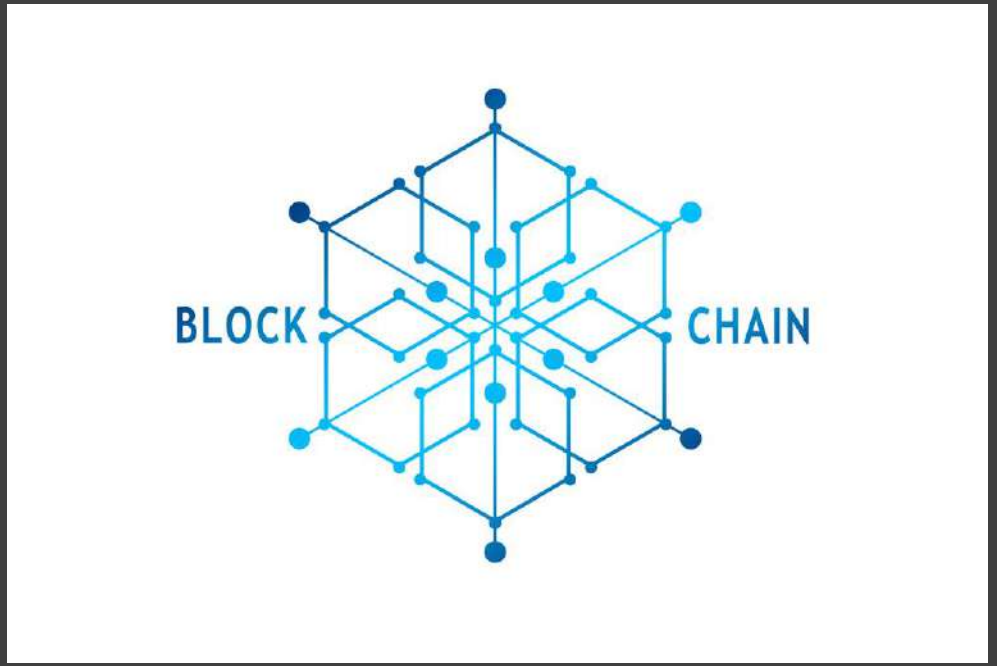
September 2016
Over 40 major financial services firms invested in blockchain or Bitcoin startups since 2014

August 2017
Cryptocurrency market cap reaches $150B (Bitcoin over $72B)

Blockchain: *A distributed ledger for maintaining a permanent and tamper-proof record of transactions.*

https://www.slideshare.net/AnthonySantaga/graduate-blockchain-society-at-the-university-of-texas-at-austin

Defining Blockchain



- No Central Server or Authority
- Distributed Ledger
- Verification Procedure
- Encryption

Basic Components of Blockchain

Image by drvr from Pixabay

Basic Concepts

- Distributed Ledger
- Decentralized
- Verification Procedure
- Cryptography Secured

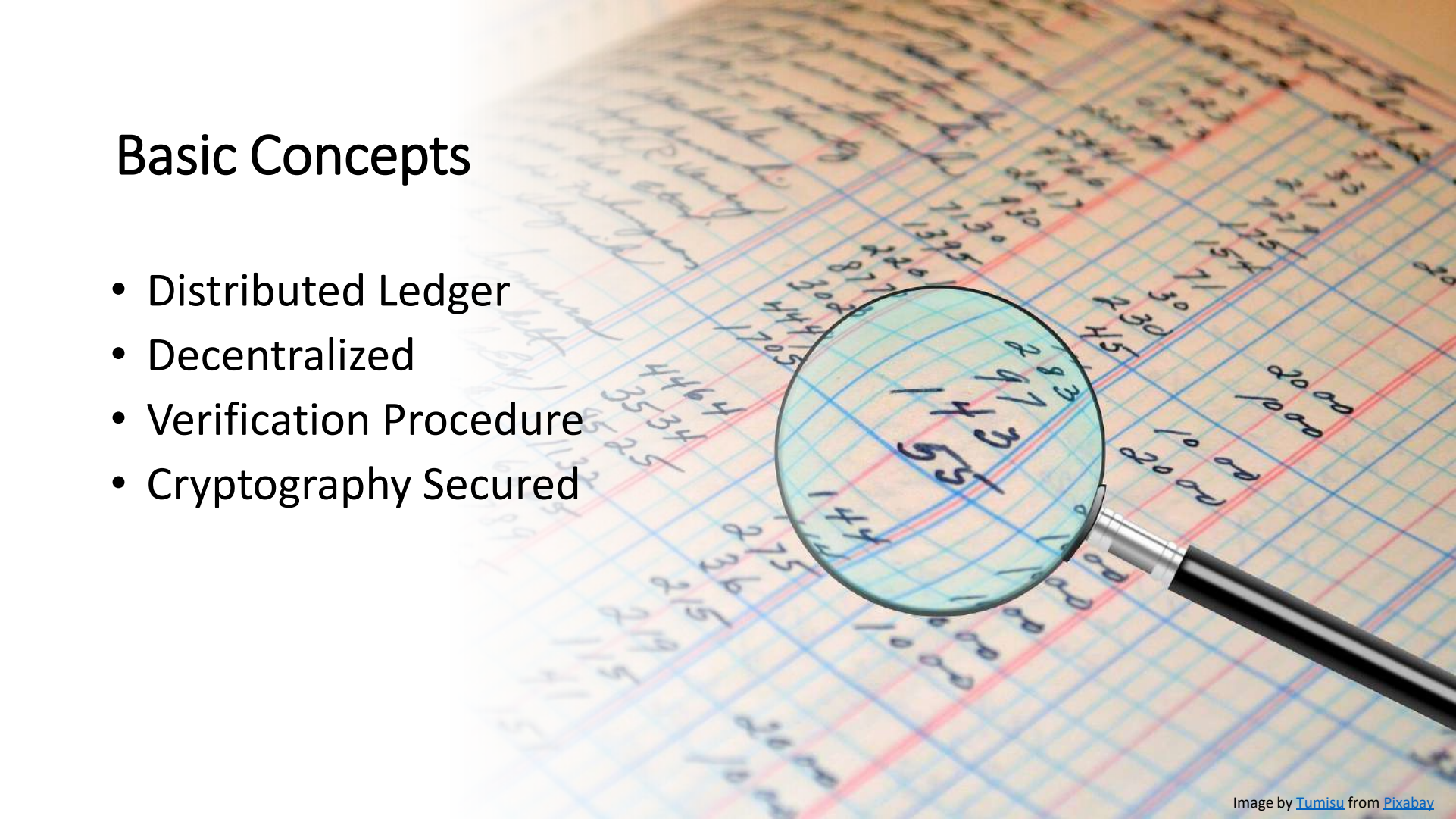
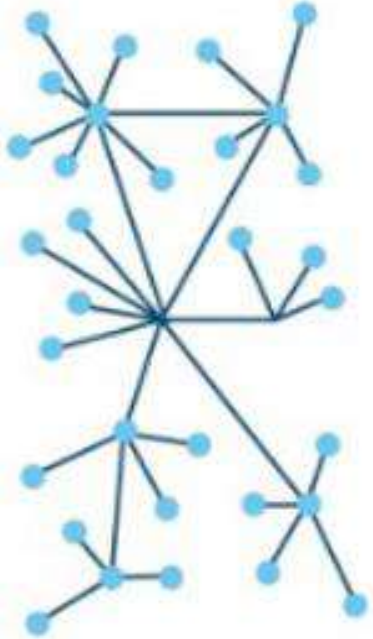


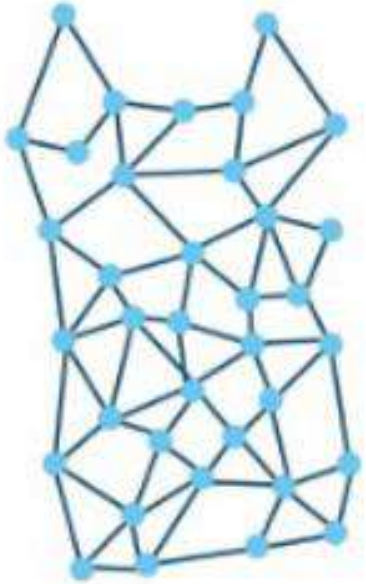
Image by Tumisu from Pixabay

Blockchain is Distributed

Centralized



Decentralized



Distributed

Information in the database is distributed

Continually reconciled by the computers in the network

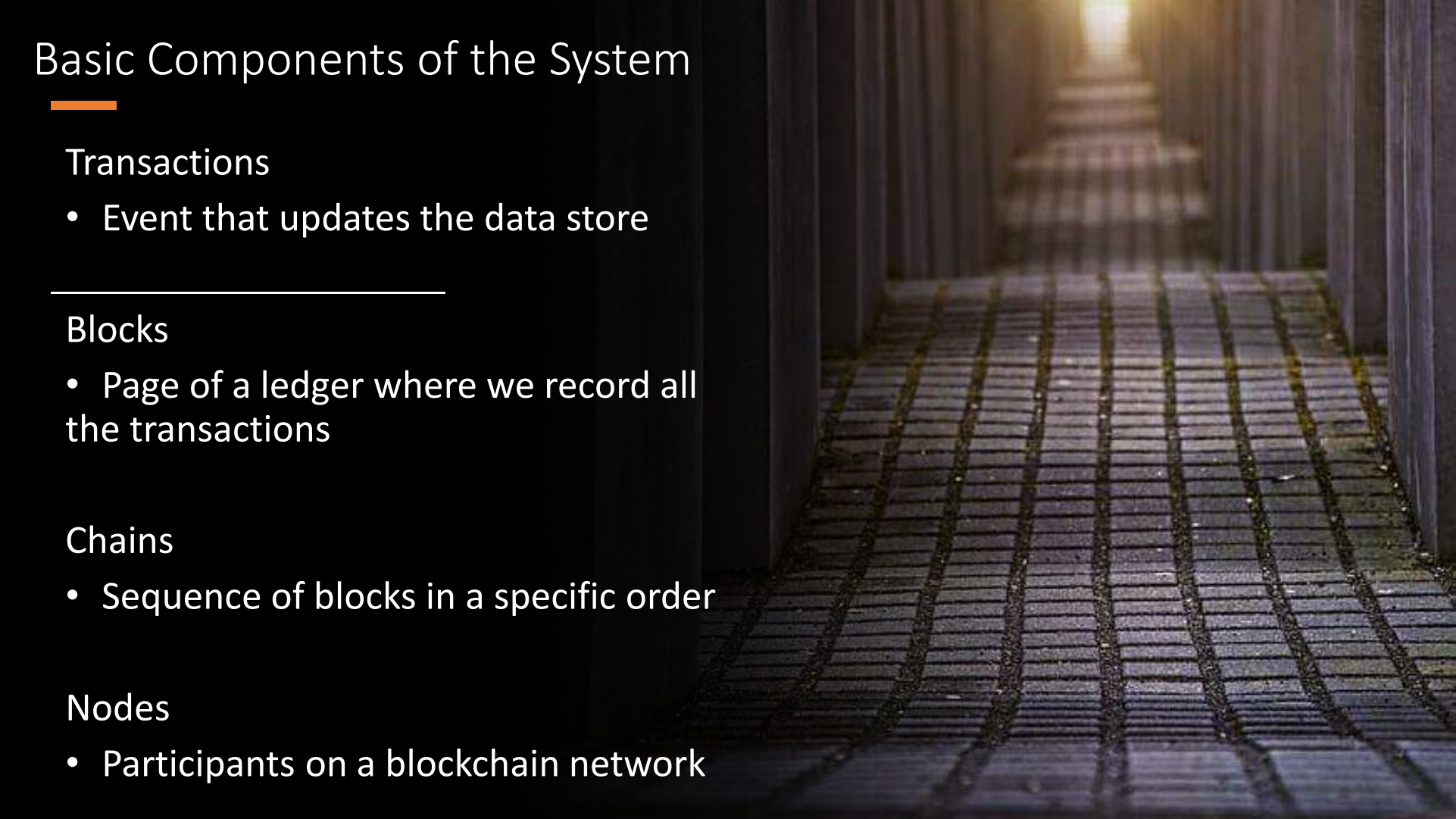
Blockchain Uses Encryption

It improves security and resilience by using

cryptography

to protect digital transactions against hacking

Basic Components of the System



Transactions

- Event that updates the data store

Blocks

- Page of a ledger where we record all the transactions

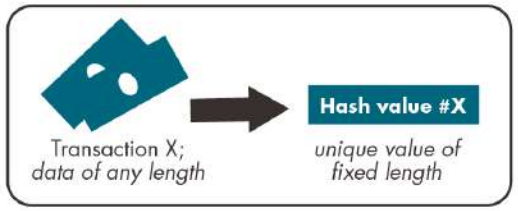
Chains

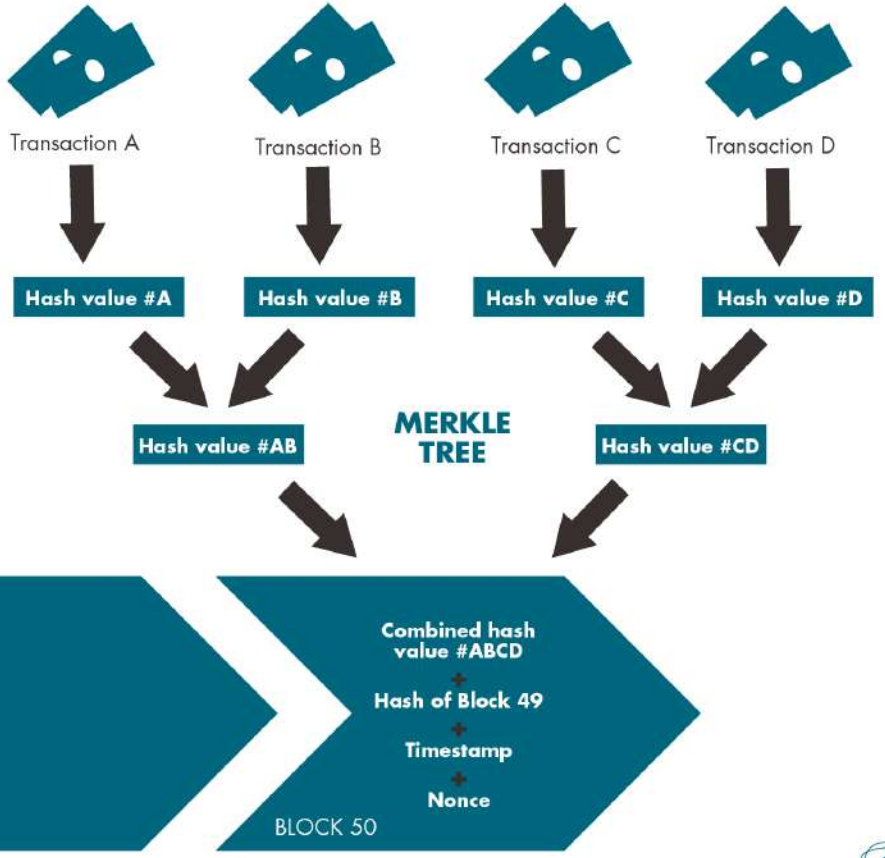
- Sequence of blocks in a specific order

Nodes

- Participants on a blockchain network

HOW THE BLOCKCHAIN WORKS





Reproduction of an original figure in "The Great Chain of Being Sure About Things" by the Economist

Center for Global Development

SHA256 Hash

Data: Project management is great

Hash: 34ea549553e506b05fe7468745fe7eb18d1f107c6a12e883d9dc71de0adf2ee6

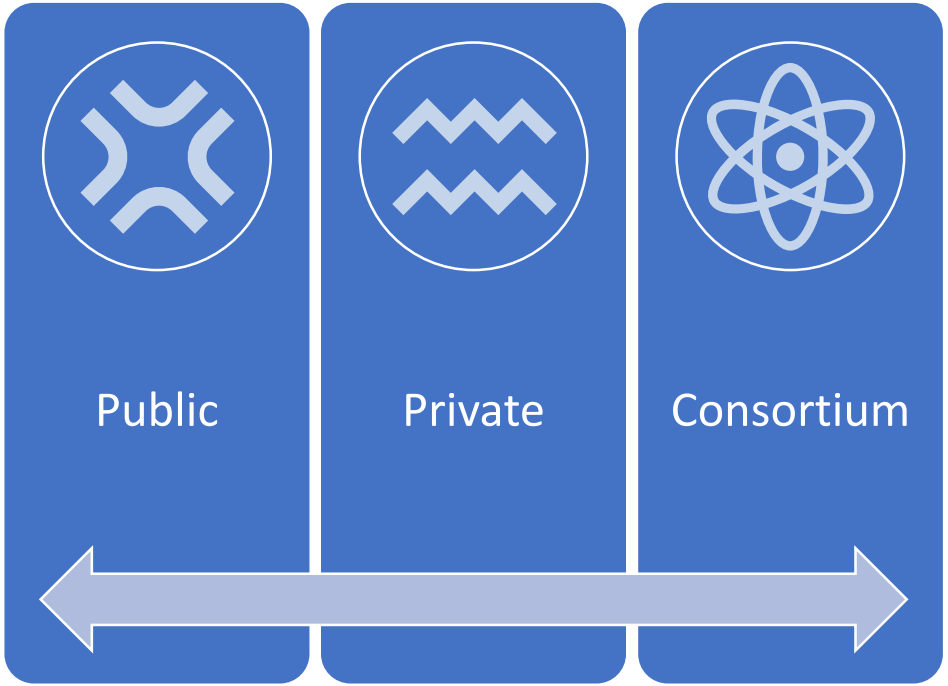
Add 2 more characters and the entire hash is completely changed…

Data: Project management is greater

Hash: 160da19ad8f8427ef252e1405e1215ad66184eb5ac7ac354dae9b00926212889

https://andersbrownworth.com/blockchain/hash

Blockchain Structures



When we talk about public and private blockchains, what we are really talking about is who can write data to our immutable ledger.

Types of Blockchains

	Consensus determination	Read permission	Immutability level	Consensus process
Public	All nodes	Public	Almost impossible to tamper	Permissionless
Private	Selected set of nodes	Public or restricted	Could be tampered	Needs Permission
Consortium	Within one organization	Public or restricted	Could be tampered	Needs Permission

Reference: https://mlsdev.com/blog/156-how-to-build-your-own-blockchain-architecture

Benefits of Blockchain

- Empowers end-users and improves trust in transactions
- Provides efficiency gains and cost savings
- Enables new economic and business models
- Improves resilience and security of transactions

Benefits of Blockchain continue…

- Immutability capabilities in recording and reporting of data
- Digital identity management through public key cryptography
- **Provides smart contracts and enabling smart auditing capabilities**

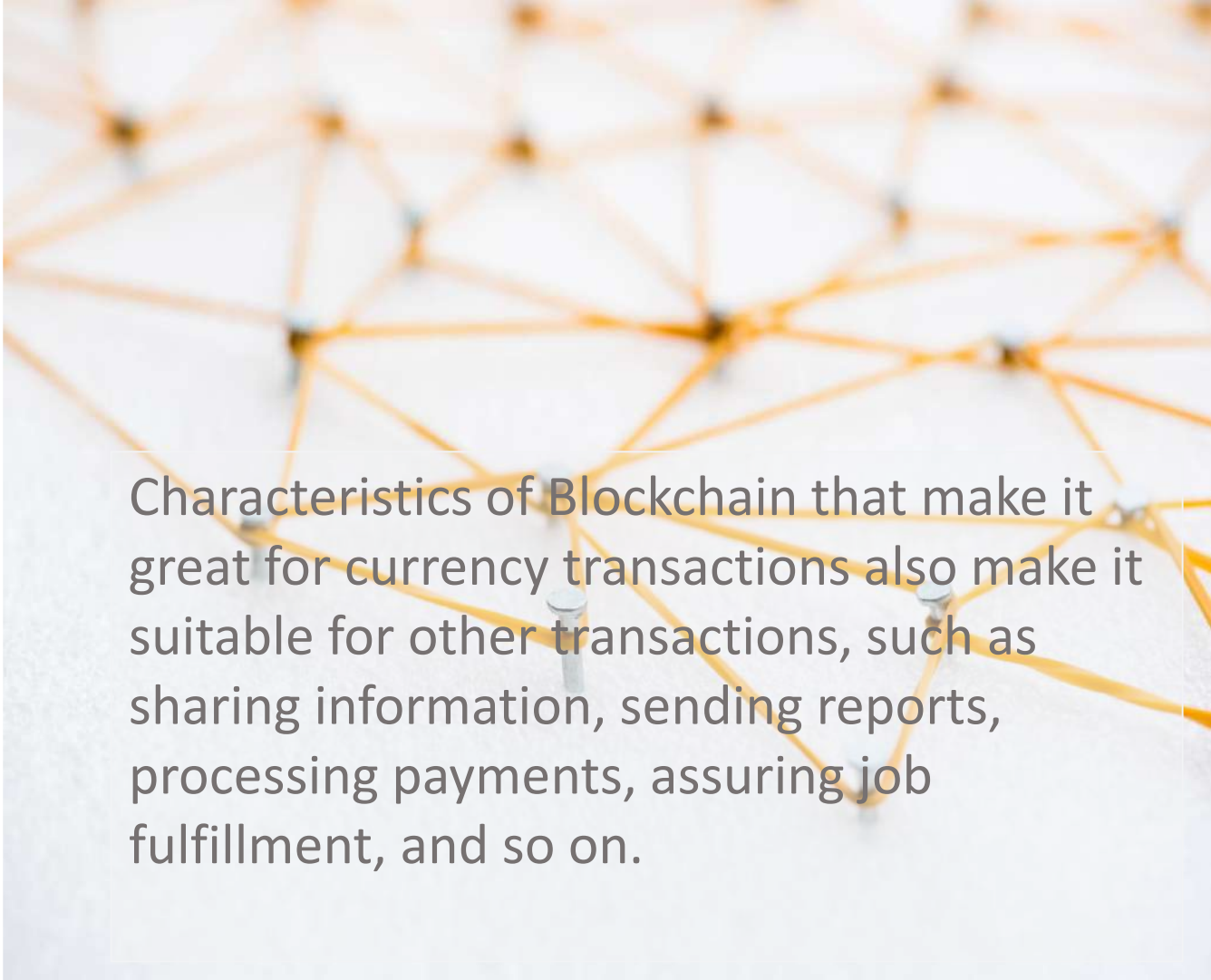
Blockchain Integration into Project Management

By 2023, technology providers focused on AI, virtual reality (VR) and digital platforms will disrupt the PPM market and cause a clear response by traditional providers.

-Gartner

2019, How AI Will Reinvent Program and Portfolio Management

Software tools are an essential aspect of Project Management in today's digital environment.



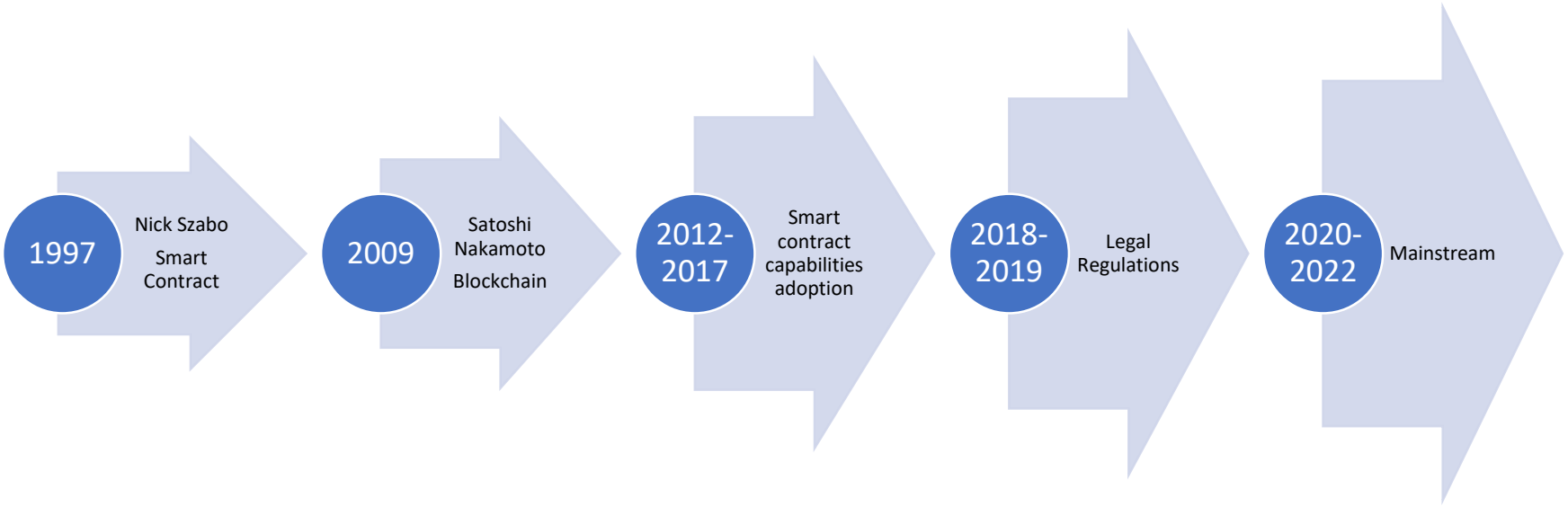
Characteristics of Blockchain that make it great for currency transactions also make it suitable for other transactions, such as sharing information, sending reports, processing payments, assuring job fulfillment, and so on.

What are Smart Contract?

Coded agreements that run on the Blockchain with certain conditions which both parties in that contract must agree to.

When those conditions are met, a smart contract automatically executes or implements itself.

History of the Smart Contract



Smart contracts, also known as a **smart properties** and **chaincode**, are codified agreements that exist within the blockchain

Science Meets Law

Nick Szabo, a lawyer, cryptographer, and computer scientist, realized that the decentralized ledger might be used for smart contracts, also known as self-executing contracts, blockchain contracts, or digital contracts, in 1994.

The Potential of Crypto and Smart Contracts for Global Supply Chains | Nick Szabo | Walton College
https://www.youtube.com/watch?v=3anlmW1dZOg&ab_channel=WaltonCollegeVideo

Advantages of Smart Contracts

- Smart contracts permanently record all your essential documents with explicit details
- Smart contracts are entirely trustworthy
- Autonomous - no reliance on 3rd parties for confirmation
- High Speed Performance
- Accurate

Advantages of Smart Contracts Continued…

- Paperless
- Backup – Documents are replicated
- Safety – Cryptography
- Improve Inefficient Business Processes

Smart Contract Explained

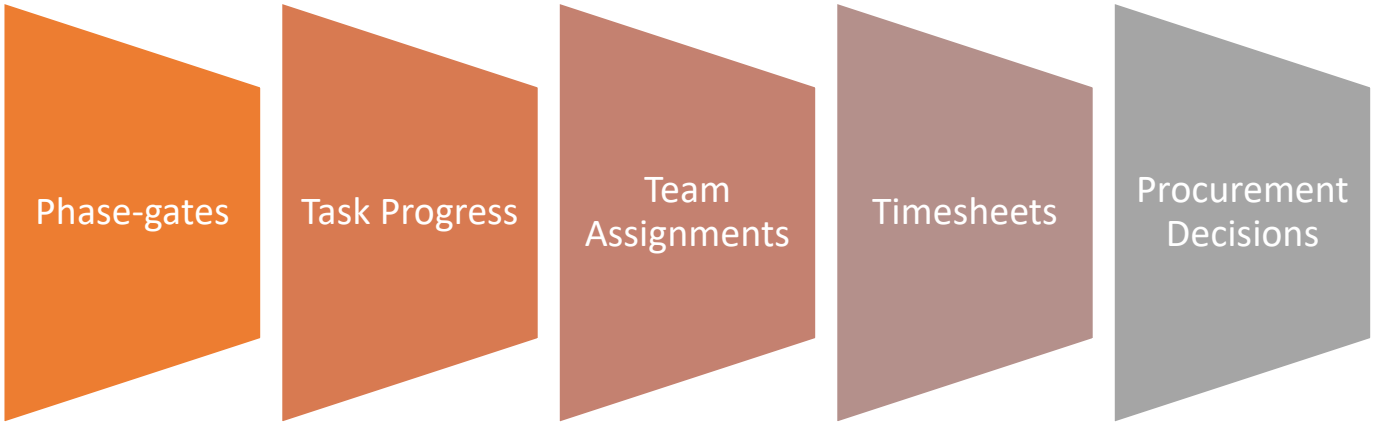
- A contract is created between two parties
- Both parties remain anonymous
- The contract is stored on a public ledger
- Some triggering events are set i.e. deadlines
- The contract self-executes as per written codes
- Regulators and users can analyze all the activities.
- Predict market uncertainties and trends

101 Blockchains
Created by 101blockchains.com

Automated agreed on rules written in code

Smart Contract Explained

Register Project Work Performance Data



Obstacles to Smart Contract Adoption

Technology	Legal	Organizational
• Working with legacy systems • Scalability	• Laws • Regulations	• Governance • Ability

How can Project Management Professionals Realize the Full Potential of Smart Contracts

BE PREPARED FOR THE ARRIVAL OF SMART CONTRACTS

CRITICALLY EVALUATE PM REQUIREMENTS

TAKE A PORTFOLIO APPROACH

Blockchain Resources

BLOCKDRIVEN ACADEMY

GBA

LA BLOCKCHAIN SUMMIT

- Conferences
- College Programs
- Associations
- LinkedIn Groups (10)
- Meetup Groups (4,632)
- Books
- Podcasts

Closing Thoughts

Thank you for viewing this session.

I hope you found this presentation added value to your knowledge of Project Management.

QUESTIONS

Image by Dalomo from Pixabay

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