Abstract

A blockchain is, in the simplest of terms, a time-stamped series of immutable records of data that is managed by a cluster of computers not owned by any single entity. Each digital record or transaction in the thread is called a block (hence the name), and it allows either an open or controlled set of users to participate in the electronic ledger. Each block is linked to a specific participant. The following features make the revolutionary technology of blockchain stand out:

    a. Decentralized
    b. Peer-to-Peer Network
    c. Immutable
    d. Tamper-Proof

Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assetsina business network. An *asset* can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding). Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

Why blockchain is important: Business runs on information. The faster it's received and the more accurate it is, the better. Blockchain is ideal for delivering that information because it provides immediate, shared and completely transparent information stored on an immutable ledger that can be accessed only by permissioned network members. A blockchain network can track orders, payments, accounts, production and much more. And because members share a single view of the truth, you can see all details of a transaction end to end, giving you greater confidence, as well as new efficiencies and opportunities.

2. Introduction

Blockchain is now a widely deployed technology, finding use beyond the financial realm. Its adoption in e-governance, health, agriculture, travel and several other sectors will provide trust and immutability to the assets. The objective of opening this CoE is to boost start-ups in the field of blockchain technology and to contribute to "Make-in-India" and "Digital India" programmes of Govt. of India. It will create a holistic eco-system for encouraging R&D, innovation, entrepreneurship in the blockchain technology in India by providing physical infrastructure and support services for prototyping, developing, testing and marketing; to incubate start-up units to create innovative solutions to meet the existing and emerging needs of sector; to provide business and technological mentorship and guidance in the domain; to provide networking services linking up with funding sources; to enable creation of IPs domestically. Blockchain is the most important technology after the internet. It has significant application areas across industry verticals including e-governance.

The National Informatics Centre (NIC) recently set up the **centre of excellence (CoE) in blockchain technology in Bengaluru**, Karnataka.

- **Centre of Excellence in Blockchain Technology** has been set up by the National Informatics Centre **(NIC).**

  o Set up in 1976, **National Informatics Centre (NIC)** is a premier technology advisor and ICT solution provider to Government at all levels through its ICT Network, NICNET. It plays a crucial role in the development of critical **e-Governance** solutions and a host of other services required by the Government.

- **Proof of Concepts:** The CoE will facilitate the Government Departments in building **proof of concepts** for use of Blockchain technology in different dimensions of governance.

- **Enhanced Transparency:** Applications of Blockchain in the Government are expected to enhance transparency, traceability and trust in e-governance systems.

- Centre of Excellence in Blockchain Technology is the third such centre, following the **Centre of Excellence for Data Analytics (CEDA), New Delhi** and **Centre of Excellence in Artificial Intelligence (CoE in AI).**

3. Collaboration: Yet to be done

4. Vision
- To become a premier blockchain education and industrial center.

5. Mission
- Research partnerships, alliances, and standards
- Collaborative industry-institute (e.g.v proof of concepts, use cases, projects)
- Knowledge dissemination
- Accelerate industry adoption and value identification.
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6. Objective
- To provide **Blockchain as a Service (BaaS)** for efficient hosting of Blockchain network and allowing all stakeholders to benefit from shared learning, experiences and resources.

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  Blockchain-as-a-Service (BaaS) is a **third-party cloud-based infrastructure** and management for companies building and operating blockchain apps.

- To have conceptual understanding of foundational concepts and architecture of Blockchain and distributed ledger technologies to answer what is Blockchain, why is it needed and how it works.

- Develop a grasp of core Blockchain platforms, understand what Bitcoin is and how it works, learn key vocabulary and concepts commonly used when discussing Blockchain.

- In understanding Consensus Mechanisms, various protocols, Blockchain cryptography and Rewards & Incentives.

- To have an exposure of a variety of use cases across various industries, based on Blockchain Implementation.

- To gain confidence to take decisions to incorporate Blockchain into various business/corporate strategy

7. Expected Outcomes

- Prove your Blockchain skills & understanding
- Gain an in-depth understanding of Blockchain & its implementation
- Understanding how Blockchain Technology is being applied across various industries and how it benefits users.
- Think in terms of how Blockchain can be applied in your current business processes to bring in Transparency, Security and Immutability

8. Focus of CoE

Blockchain for industries

Industry leaders are using IBM Blockchain to remove friction, build trust and unlock new value. Select your segment to see how.
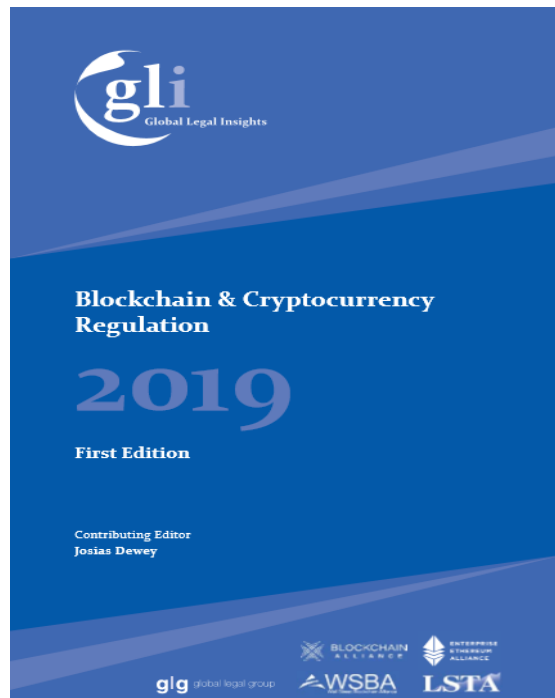
- Supply chain
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  Healthcare

- Government

- Retail

- Media and advertising

- Oil and gas

- Telecommunications

- Manufacturing

- Insurance

- Financial services

- Travel and transportation (PDF, 340 KB)

Reference

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Books given for reading to the students

\\DrDBH\\CoB\\Report

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Global Legal Insights

Blockchain & Cryptocurrency Regulation

2019

First Edition

Contributing Editor
Josias Dewey

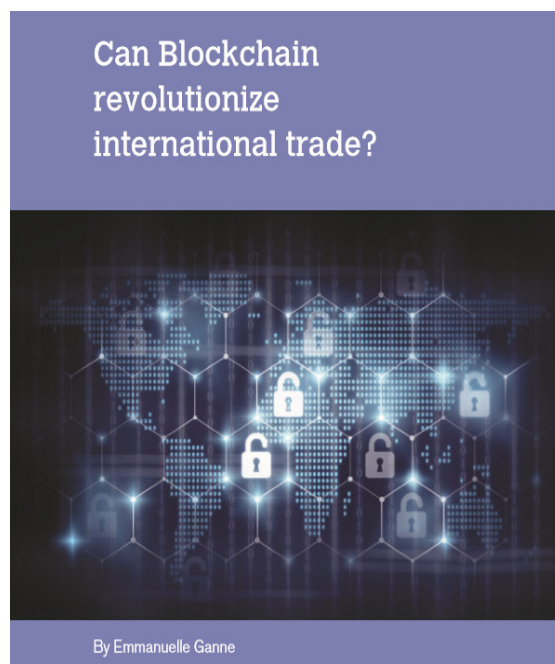glg global legal group — WSBA — LSTA

European Parliament

Blockchain for supply chains and international trade

STUDY
Panel for the Future of Science and Technology

EPRS | European Parliamentary Research Service
Scientific Foresight Unit (STOA)
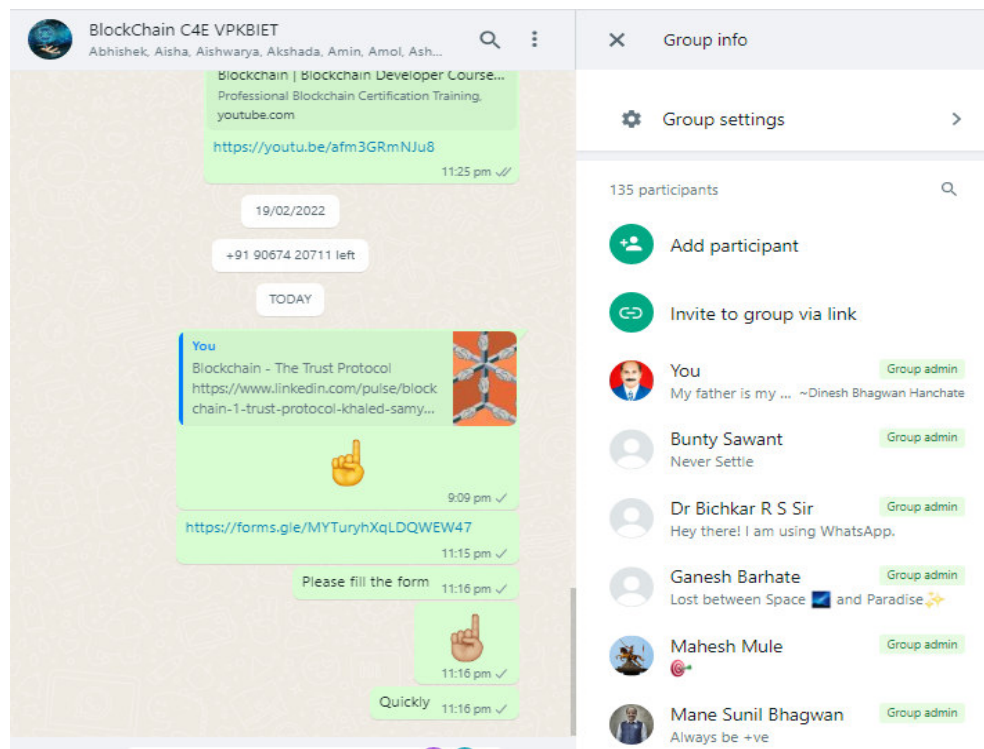PE 641.544 – May 2020

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Can Blockchain revolutionize international trade?

By Emmanuelle Ganne

iab.
TECH LAB

Blockchain
Technology Primer

Version 1.0 | July 2018

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Encouraged students to join profession courses

135 Total members in the group which includes students/faculty/industrialist