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We shape future

Blockchain in manufacturing

A survey from the World Economic Forum from 2015, which predicts that 10% of global GDP will be stored on the blockchain by 2027.

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You can never have too much trust and traceability in manufacturing.

Blockchain promises a new model for;

- traceability,
- supply chain transparency,
- and auditability.

It promises to radically simplify many business processes, reducing risk, and boosting transparency.

Smart contracts for compliance

The introduction of smart contracts, the number of use cases increased dramatically. Smart contracts can be described as “bundles of coded logic or procedures which sit beside the entries in the ledger.”

- Transaction costs reduction and increased transparency
- increased digital efficiency by cutting out the middle man.
- guarantee product quality which improve brand loyalty

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Blockchain technology in the manufacturing industry

□ **Primary potential benefits**

1. Increase traceability of material supply chain to ensure corporate standards are met
2. Lower losses from counterfeit / grey market trading
3. Improve visibility and compliance over outsourced contract manufacturing
4. Reduce paperwork and administrative costs

□ **Secondary potential benefits**

1. Strengthen corporate reputation through providing transparency of materials used in products
2. Improve creditability and public trust of data shared
3. Reduce potential public relations risk from supply chain malpractice
4. Engage stakeholders

Monitor advancements

□ A blockchain supply chain can help participants **record price, date, location, quality, certification**, and other relevant information to more effectively manage in the supply chain.

□ **The availability of this information within blockchain;**

1. can increase traceability of material supply chain,
2. lower losses from counterfeit and grey market,
3. improve visibility and compliance over outsourced contract manufacturing.

Supply chain management and digital product memory

- 1.** The idea is that every product gets a “digital passport” that proves its authenticity and helps to determine its origin, thereby preventing the sale of fake goods.
- 2.** All actors in the supply chain can access the information that is relevant for them and they can act on it. ensures that the transfers of ownership are explicitly authorized
- 3.** Afterwards, the buyer can scan the product (e.g. via QR-Code or NFC) and access the information from the blockchain to check every step of the production process.

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Automation & IOT

Blockchains may also become a vital enabling component of moves to enhance automation along supply chains, since they can directly help to automate the agreements upon which automated transactions will be based; smart contracts," which ensure that pre-agreed obligations can be executed in an entirely programmable manner.

Internet of Things and Industry 4.0 applications

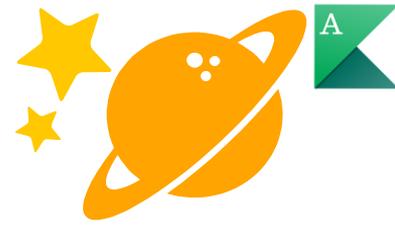
Collect Real time data

IoT devices can be register on a blockchain to create a digital identity of the device which cannot be manipulated. It also offers the advantage that the information about the device can be dynamically updated and added in comparison to traditional certificates.

Analysis & Sell data

Analytics through ML /AI from big data is possible and whereas one can collect their data and decide who can purchase it both bringing efficiently and monetary incentives .

3D printing platforms



- The moon short idea create manufacturing based on blockchain to facilitate the 3D printing supply chain with IOT & automation.
- The design file uses smart contracts to automatically negotiate pricing, find the nearest and cheapest 3D printer and negotiate conditions with the customer and the logistic service provider.
- Which reduces cost in the whole process.



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Examples of Blockchain in Manufacturing

- Three examples of the potential blockchain holds for manufacturers include;
 1. asset management,
 2. food product traceability,
 3. and pharmaceuticals traceability.



Asset management

1.

In day-to-day manufacturing operations, blockchain may prove incredibly useful in asset management and minimizing manufacturing downtime.

2.

Deploying blockchain technology between their ERP system and parts suppliers, enabling IoT-connected machines to safely order replacement parts.

3.

Combined with predictive and prescriptive analytics, IoT-driven blockchain technology may eventually be the most automated, fail-safe way to keep the factory humming.

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Food product traceability,

In the food industry, blockchain can increase traceability and food safety. Food shipments are traceable and digitally recorded **from field, farm, or factory to broker, then distributor to store.** At each checkpoint, a status is signed and logged via blockchain. The result is traceable information that can be pulled up in seconds in the event of a foodborne illness.

Pharmaceuticals traceability

- In the pharmaceutical industry, blockchain technology helps ensure regulatory compliance and improves supply chain security.
- “interoperable system” to track and trace prescription drugs across the supply chain in order to eliminate counterfeited drugs
- guarantee product quality which save lives .

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How you move towards adaptability?

As you think about deploying this technology to improve manufacturing processes for yourself, look for:

1. Pre-defined use-case blueprints and ready-to-use solutions
2. Embedded blockchain technology in existing applications that adds permission-based transaction security
3. Manufacturing applications that feature easy on-boarding for manufacturing supply chain partners



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Thanks!

Any questions?

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