

Blockchain and the pharmaceutical supply chain

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Blockchain technology can revolutionise many aspects of our lives, one of which is providing a secure, interoperable system for improving the visibility of pharmaceutical value chains.



What is blockchain?

technology was originally used to establish Bitcoin, the first viable digital currency, and is now being considered for many other sectors. Blockchain's appeal is based on its securely organised set of blocks that are sequentially linked together. This is what creates a digital ledger of data and makes the technology so revolutionary.

Blockchain has three major benefits:

- It's completely secure: Once a link is added to the chain, it can't be changed, moved or deleted.
- It's decentralised and distributed: Participants can securely share data and execute transactions. No single provider or authority can facilitate sharing or data execution.
- Blockchains can include smart contracts: These allow participants to include instructions within the blockchain that can be triggered and executed at a later date.

In a nutshell, the high level of security provided by blockchain technology enables supply chain transparency. Everyone has access to the same secure data – which can easily be traced – as soon as it's created. This not only significantly reduces the time needed to track problems and manage quality and inventory, but it also guarantees that data hasn't been counterfeited and adds significant automation capabilities.

Blockchain and serialisation

One of the main challenges with serialising the supply chain is validating the serialisation process. But this is where blockchain really shines. Every block added to the chain has a timestamp and a cryptographic key signature that cannot be counterfeited. This provides complete control over who can add to the chain, and when, to safeguard privacy.

Every action within the supply chain becomes a block in the blockchain. In other words, sourcing raw materials or

ingredients adds a block, transportation of those materials and ingredients adds a block, and so it continues throughout the chain, creating integrity and a tamper-proof audit trail.

Another issue that's nullified when it comes to the blockchain is integration. Because each party can read and exchange information without customised software, each player in the chain can exchange data freely and independently. No one party or authority has control.

Blockchain and the pharmaceutical supply chain

Blockchain technology offers great potential for preventing diversion, counterfeiting and tampering because of the significant tracking capability of products throughout the supply chain. This tracking ability also ensures recalls are fast and simple.

Under increasing global regulatory scrutiny, the pharmaceutical industry is primed for advancing blockchain to increase tracking and security in its supply chain.

About Pyrotec

Pyrotec is a privately-owned South African company that specialises in providing innovative, top-quality product identification solutions. The company's extensive service offering includes on-pack product identification solutions – including self-adhesive label systems, coding and labelling equipment – as well as financing and cloud-based brand protection, track and trace and consumer engagement services. Founded on a dedication to quality, operational reliability and excellent service, the Cape Town-based company has a national footprint with centres in major cities across the country. With more than 50 years' experience, Pyrotec has two brands operating under its ambit: Pyrotec PackMedia, which includes Pyrotec PackVerifi; and Pyrotec PackMark, including Pyrotec Finance. This proudly independent company is headed up by the managing director, Rowan Beattie. For more information, visit www.packmedia.co.za

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Pyrotec



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