Essay: What are the points you would consider before using a Blockchain to handle the financing of a supply chain of medical products?

According to APICS, one of the most recognized Supply Chain Associations, 'the supply chain is a global network used to deliver products and services from raw materials to end customers through an engineered flow of information, physical distribution and cash' (APICS, 2018). Blockchain can be particularly important in the information and cash flows since it can maintain integrity and can help trigger payments and changes of ownership. If every product can be represented in a 'blockchain and the suppliers have to cryptographically sign when and where they processed it, it is possible to efficiently track the movement of a good all the way to its source and identify any faulty suppliers' (Trivedi, 2019).

There are some characteristics of supply chains in the health industry that have to be analyzed before implementing blockchain technology; not all supply chains are perfect candidates for the switch, some might even increase its complexity and won't get all the benefits.

A few basic questions need to be asked first such as: Is visibility and security of information critical in the supply chain? Would the implementation make processes more efficient and would bring benefits to all parties involved? Do smart contracts will facilitate interactions between nodes? Would there be any benefits of removing most of the financial intermediaries that characterize regular supply chains?

Points required to consider before using blockchain in the health industry:

- Visibility and Traceability: When expiration windows are small and/or temperature fluctuations are critical in the quality of the product, traceability becomes the most important characteristic. Blockchain can help track the product along the supply chain and provides visibility to all partners. Companies can track the products, from provenance to customers, throughout the supply chain. Alarms can be setup at any point in order to detect disruptions as they occur.

- Security: making sure that transactions are immutable brings extra security that is important in the health industry. Blockchain allows to record and keep track of big amounts of information in every step (block). Information such as: lot numbers, dates, raw materials, formulas, origin facilities, personal involved in the production, just to mention some of them, can be recorded.
- Efficiency: the implementation of blockchain has to provide efficiency to the supply chain. Since there is less data capture, it can improve data accuracy and can save time with data analytics or with regulatory compliance.
- Interest and motivation from all parties involved: the only way the whole process if going to work in the long term is if all of the partners get significant benefits. Some partners might be interested in getting paid faster and some others will benefit from having extra layers of security or added visibility.

Once we answer positively those questions and we are certain that blockchain is the right way to go in order to transform the supply chain, we can expand its benefits and get some extra value by letting it handle the financial side of it too in the following areas:

- Smart contracts: Alarms can be setup downstream the supply chain and payments can be triggered by certain events such as delivery of products, pass of quality tests, etc. Transfer of ownership can be changed automatically. Since there are immutable trails most of the external audits can be eliminated.
- Smart Bills of Lading: information that contains what the carrier agrees to transport from one place to another. Smart bill of ladings can be used in case of loss or damage of goods for insurance purposes and can be triggered automatically.
- Receivables / payables: Blockchain can increase the speed of the receivables and payables processes with more transparency and accuracy. When the smart contract is executed it can formally start the whole payment processing. Since all data is stored inside blockchain, it can't be altered and it is visible to all parties involved. No human intervention is required and approvals are immediate.[3]

- Financial intermediaries: with the introduction of crypto payments, banks and other institutions will play a less significative role bringing payment transaction costs down; Swift network transfers or credit card payments can be minimized.

Since most supply chains are based on performance and cost reduction, there is always an incentive for suppliers to profit in some other way (it can be by sourcing from unethical sources, changing agreed quality without notice, etc.), blockchain is a solution that will help maintaining trusted information.

The points mentioned above must be analyzed, no matter if it's in the auto or healthcare industry. Obviously, the weight of the variables would be different but they all have to be studied before deciding to transform the supply chain.

As in every major change, it is required to involve everyone. Upper management has to be able to 'sell' these major changes to stakeholders, employees and partners. Once everyone is convinced change can be possible.

Reference

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