

## Bill's Building Blocks

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### Blockchain: A Paradigm Shift

In 1993 I attended an APICS lecture by Joel Barker, author of the book *Paradigms: The Business of Predicting the Future*, on the topic of paradigm shifts. Joel spoke about how certain business problems were intractable until someone discovered a revolutionary new approach that would completely change the process. An intractable problem is one that has no known solution. At the time there were many “discoveries” in operations management that turned out to be minimally incremental improvements. It was difficult to ascertain what was just a marketing acronym and what was real.

Fast forward 25 years...Today there is a new set of different seemingly intractable business problems. Yet a single paradigm shift promises to be able to solve them.

- How to perfect cyber-security for business/financial information transactions?
- How track and trace conflict minerals all the way back to mining operations?
- How to eliminate the possibility of counterfeiting in the pharmaceutical industry?
- How to measure end-to-end temperature differentials in cold chains?
- How to prevent identity theft in world populations?

If you have been paying some attention to the trade press, then you know that blockchain is a very hot topic. But, is blockchain a real paradigm shift? Some say it can solve each of the supply chain related problems listed above.

Here is a summary of some things I have learned through reading *The New York Times* and attending a Global Supply Chain Symposium at Rider University. Blockchain is a distributed ledger and consensus smart contract visible to all trading partners in the chain, but owned by none of the trading partners in the chain. Each transaction adds a block of encrypted information. Blockchain has been shown, so far, to be tamper-proof because every party would have to agree to change every preceding encrypted transaction from the current transaction all the way back to the initiation of the chain.

Blockchain has been proven for a year as the underlying information network for the virtual currencies Bitcoin and Ethereum, and in current research conducted by IBM and Microsoft. Now, the International Standards Organization (I.S.O.) is setting up work groups to investigate a blockchain standard. Blockchain feels like a paradigm shift.

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