



Enterprise Resource Planning (ERP) / Electronic Data Interchange (EDI)
 Supply Chain Vendor Compliance
 Internal Controls / Fraud Detection & Reduction
 Business Analysis / Data Analysis / Systems Analysis

Since January 1996

Blockchain: The next evolution of the additive ledger.

Unlike XML and RFID which were deemed disruptive supply chain technologies that were going to respectively displace Electronic Data Interchange (EDI) and bar codes, neither of which has happened nor is it projected to, blockchain technology is the new, fast-rising supply chain buzz-tech that shows real promise of being more than just a solution looking for a problem. Based on the foundational technology used to support crypto-currencies, the blockchain design works because of transparency: all trading partners see the transactions that the other trading partners are posting because the database ledgers are available to all who are trusted to update them.

For companies that are still confused or hesitant about making the leap into blockchain, or at least investigating a business use case for blockchain, there is good reason to be cautious: one major stumbling block is sure to be how the blockchain will integrate with the organization's existing supply chain systems, notably Enterprise Resource Planning (ERP) and Electronic Data Interchange (EDI).

(One issue that I have is the use of the term "ledger" in blockchain. The "ledger" term is typically associated with the accounting field, yet blockchain and its "ledger" are not limited in any way to just accounting. The ledgers in blockchain are really just data tables in a database. But I will use the term "ledger" in the rest of this article as a way to gently bring the term into practical use.)

The basic fact is that ledgers have been in integral part of supply chain systems for ... well, forever ... so the concept is nothing new. As such, bringing in another ledger for integration is an exercise in integration, which is always a subjectively thorny (yet for me, enjoyable) project.

Decades ago, before EDI but after MRP (Material Requirement Planning) and MRP II systems had evolved into ERP systems, transactions such as sales orders, purchase orders, and invoices were manually entered whereby the software systems ledgers were updated. Each supply chain trading partner – the customer/buyer and the vendor/seller – had their own, disparate, disconnected software systems and thus their own ledgers.

Advance to the integration of ERP and EDI and we have more inter-connected supply chain systems between trading partners. The exchange of information is more fluid though not quite real-time in many cases. Nevertheless, we have moved away from much of the manual effort and with more advanced ERP systems, the software system ledgers are automatically updated for every corresponding transaction that affects them. Still, each trading partner's ledgers are their own and are off-limits to the other trading partner. But EDI has enabled a greater free-flow of information, if only to be siloed off by trading partner.

Now here comes the blockchain with its shared ledger. We have to consider what information will be in the shared ledger. It seems to me that logically information previously and openly shared would make sense to put in a shared ledger, e.g. data that was sent via EDI. Purchase orders, ship notices, and invoices would be great transactions to start with. In essence, the blockchain's shared ledger acts as the data repository of record so both parties can always go back and validate what the original transaction was.

Why is this important?

Especially in retail, though also in grocery, pharmaceutical, medical products, automotive, and government, supply chain vendor compliance focuses on vendor performance. One critical aspect of vendor performance from a metrics standpoint is adherence to EDI specifications. Posting transactions in a blockchain ledger – with the date/time stamp – removes the back-and-forth of validating when a transaction was sent by the sender. This is most useful for trading partners that prefer or allow their vendors to use secure FTP or AS2 connections, alleviating the need for interim value added networks.

However, speaking of value added networks (VANs), haven't they essentially acted as interim blockchain ledgers for decades as the keepers of the shared purchase orders, ship notices, invoices, and other transactions that pass through them? They have. So, VANs have been acting conceptually as the shared ledger all along that blockchain is introducing us to. VANs, and data conversion companies who resell VAN services, have been trusted with our most sensitive business transactions for decades and are the backbone providers of some of the largest supply chains in the country.

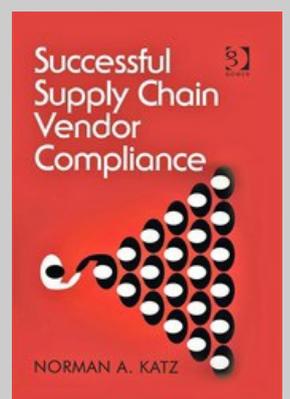
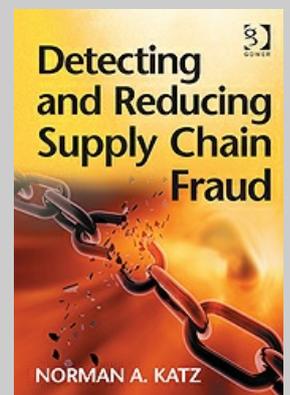


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Blockchain ledger posting is a one-and-done deal: you cannot go back and update a ledger record once it is posted. Therefore, the necessity of getting it right the first time is critical, because posting a continual stream of updates or corrections would drive you and your supply chain partners crackers. As such, data accuracy and business processes are really going to matter a whole lot before blockchain is implemented.

The idea of the blockchain and its shared ledger is really nothing new. It is looking at technology from a different perspective and applying it to better solve a business problem. Companies considering blockchain should start from a point of familiar reference in analyzing where to begin to fit this new technology into the grand scheme of software systems and business processes.

Thanks for reading.

Norman Katz

*Lean Six Sigma Black Belt
Certified Fraud Examiner
Certified Controls Specialist
Microsoft Office Specialist*

Katzscan Inc.

954-942-4141

<http://www.katzscan.com>

Executive Advisor

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