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THE BLOCKCHAIN EFFECT:

How Will the Distributed Ledger Change the Customer Experience?

Scott Furlong

As we march toward an increasingly digital economy, meeting the growing demand for an improved customer experience and heightened trust are essential to achieving market success. A consumer's "best last" experience becomes the benchmark for every experience going forward, regardless of the channel or the products or services they are consuming. Banking institutions are creating "digital banks" to attract and retain a millennial client base who are redefining customer experience. If we can order goods by simply speaking into an Amazon Echo and expect those goods to arrive the next day, we can't possibly be expected to go into a store, stand in a checkout line, pay manually and self-deliver the goods back home.

Creating a memorable customer experience is not just about grabbing market share, it also is about generating incremental revenue. According to Harvard Business Review, "Customers who had the best past experiences [with your organization] spend 140 percent more than those who had the poorest past experience." This not only points to the need for a positive customer experience but also to the need for trust.

Unfortunately, trust between consumers and the enterprises they patronize has been eroding over the past few years. The recent revelation that Facebook sold data from 87 million users to Cambridge Analytica is just one example.

Consumer trust of enterprises is built on two implicit beliefs: 1) the transaction, which goes beyond an exchange of goods and services to virtually any exchange between two parties including monitoring, delivery, etc., must go through as designed and agreed upon; and 2) data must be secure. According to the Harris Reputational Quotient (RQ), a data breach is one of the top four risks to a company's reputation.

So how do today's enterprises improve customer experience and trust? Could blockchain prove to be a "trust machine," as some say? Because transactions that are recorded on a blockchain do not involve an intermediary, the customer owns his or her own data, and the odds of a security or data breach are very, very small. As CEO of IBM Ginni Remetty famously said, "What the internet did for communications, blockchain will do for trusted transactions."

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Blockchain 101

Blockchain is a distributed database network built on multiple computers and servers containing "blocks" of transaction data recorded by all parties involved in a transaction and linked or "chained" together. Each computer contains the entire chain of blocks and functions as a "node" in the larger blockchain.
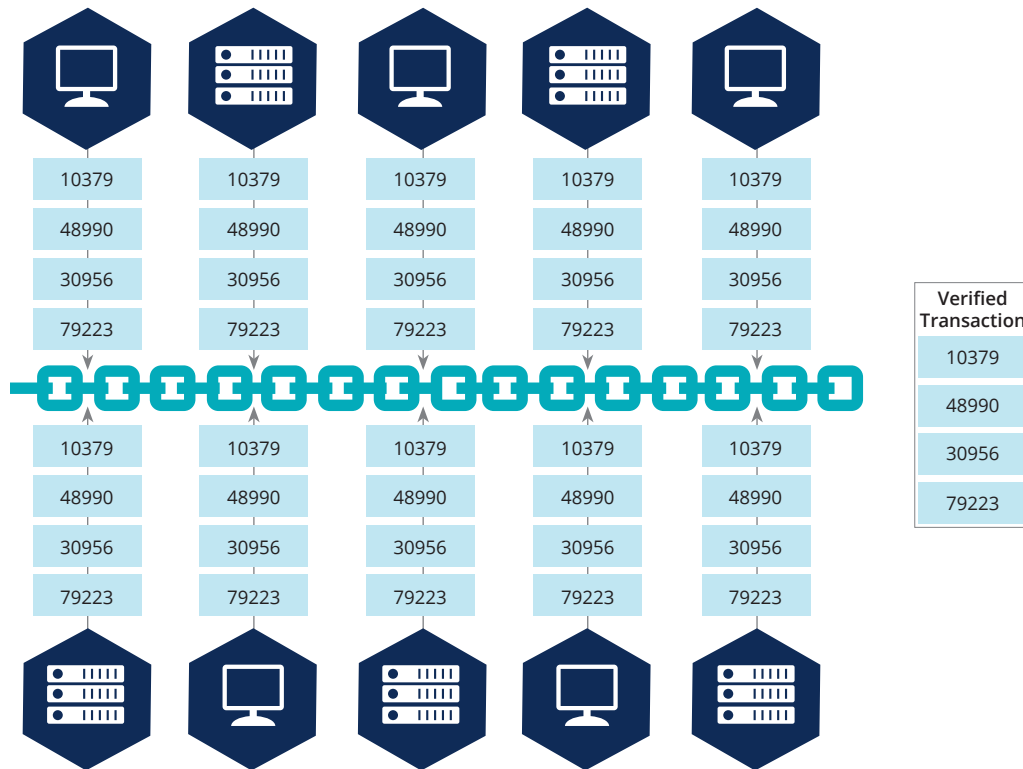
Instead of an individual company housing and maintaining its own transactions database, then reconciling transactions against its vendors and customers' information, a blockchain records all transactions between the company and its vendors and/or customers on multiple encrypted "blocks" in the permissioned network. Each of these digital transactions is continuously verified by network nodes that secure and process block transactions in the blockchain, essentially eliminating the need for a third-party validation.

The graphic below depicts an example of a blockchain transaction. Each computer or node contributes pieces of the transaction represented by the blocks with digits. Each node is verified by the others to accurately document the transaction. Because Blockchain is a distributed ledger, the transactions reside on thousands of servers. Each "block" has the same information and is immutable, making it incapable of or susceptible to change.

Figure 1: An Example of a Blockchain Transaction.

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While it's possible for an individual block to be hacked or changed, the protocol of the blockchain is to ignore minority changes. And hacking the entire distributed ledger to change every verified block is virtually impossible.

How Will Blockchain Impact Customer Experience (CX)?

Today, every customer interaction housed on a blockchain presents an opportunity to capture data that can be at once verified and made more valuable than ever before. Blockchain enables both parties to have versions of order confirmations, receipt verifications, discrepancy follow-ups and payment verifications. Because blockchain allows a buyer and a seller to share the same version of the transaction – and because it creates practical immutability of the transaction and eliminates clearing requirements and missed expectations – it drives the "next best experience." Though enterprises do not own the data in a blockchain, it allows them to create a unified view of the customer.

For CX leaders, blockchain technology offers the potential for increased data integrity, instantaneous or significantly quicker reconciliations, reduction in cycle time, increased audit efficiency and improved real-time market and customer insights. Two blockchain capabilities have particularly significant implications for CX:

1. **Distributed Ledger Technology (DLT)**

A distributed ledger is a consensus of replicated, shared and synchronized digital data spread geographically across multiple sites, countries or institutions. Today, in cases in which we rely on a double-entry accounting system for debits and credits, a DLT can leverage the blockchain to:

- Produce transactions blocks in sequential order based on a measure of time (for example, every ten minutes)

- Provide a backend service to an application that operates on the trusted transaction data stored in the blockchain.

- Provide an immutable historical transaction record to support digital commerce needs, e.g. loyalty points and fulfillments.

- Provide a distributed method of data ownership to the entire network, removing the central repository and central point of failure.

Enterprises can securely and privately leverage either a public or an open-source blockchain. This could, for example, allow Walmart to process invoices for Samsung products, while at the same time, account for taxes and supply tax information automatically to auditors. By creating a perpetual audit that multiple parties can view at any point in time, a DLT enables multi-functional recordkeeping and creates a verified storybook of multiple aspects of a single transaction with all contributing entities.

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This means CX teams using blockchains that are open DLTs can view all transactions with all parties in the blockchain protocol. Today, this requires a tremendous amount of manual effort. In the coming years, cognitive and artificial intelligence applications are expected to be developed to automate the data mining of open blockchains and derive market and customer insights that have, until now, been impossible to gain.

2. Smart Contracts

A smart contract is a software application built on a distributed ledger that contains all terms and conditions between parties. Because it delivers an immutable, verifiable and secure record of all contracts and related transactions, it reduces operational overhead, administration and service costs, and facilitates compliance and reporting. Blockchain Hyperledger – a project started to support the collaborative development of open-source blockchains and related tools – is self-executable and functions across all elements of a supply chain regardless of industry. This technology has the potential to be a game-changer for companies that need to trace products and guarantee safety from inception to delivery. The Harris RQ finds that product recalls due to contamination that may cause illness accompany data breaches as a top reason for reputation decline. But with blockchain, a biopharma company, for example, can create a smart contract with a shipping company that requires vaccines to be delivered in a temperature-controlled container. By monitoring RFID chips in the shipment, the smart contract can automatically verify if temperatures remained within the agreed-upon range during the entire transportation timeline, close the contract and initiate payment.

Key Benefits Facilitated by Blockchain and Customer Experience

While blockchain-powered CX may still be in a somewhat-nascent stage especially compared to cryptocurrency, the intended benefits are broad and significant. Some of the more notable benefits enterprises can expect include:

- **Improved trust:** CX teams will be able to transform how they capture, share and store data and insights to ensure data security and drive transparency without violating personal privacy.

- **Better promotion of trade:** In B2B transactions, the increased transparency and accuracy of the entire value chain will streamline and facilitate trade promotion.

- **Improved tracking:** Visibility into real-time data will mitigate risks in the supply chain of perishable goods and cut down on the chances of public recalls or illness.

- **Increased accuracy:** The elimination of an intermediary and the creation of a single source of the truth between parties increases veracity and the immutability of the block maintains accuracy.

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- **Improved ability to "know your customer":** Not just financial services companies need to know their customer; other industries gain marketing and CX benefits from knowing their customer from multiple perspectives.

- **Improved prevention of fraud:** The immutable nature of blockchain significantly reduces the possibility of fraud as long as the transaction is not anonymous.

- **Diminished claims:** Claims and disputes can be resolved faster and more efficiently than ever before.

- **Greater control:** Peer-to-peer interaction increases control over the transaction.

Is There a Limit to Blockchain's Applicability in CX?

The major limitation of blockchain at this moment in time is the fact that applications for its use are still emerging, and full adoption may take a couple of years. Buyers and sellers will have to configure their systems to be compatible with each other, including syncing encryption protocol that requires a private cryptographic key for each user. Additionally, organizations will need some degree of process standardization and transformation to fully realize benefits. Currently, financial institutions appear to be the early adopters.

Figure 2: An ERP System Integrates Many Applications that May Benefit from Blockchain.

The blockchain market is already humming today. SAP, Oracle, IBM and Microsoft have blockchain offerings with Microsoft offering "blockchain platform as a service." While we are still early in the adoption of blockchain technologies, the evolution of use cases continues to accelerate. From tracking food along a supply chain to linking college diplomas to digital identities, new blockchain applications are emerging every day. And the near-universal adoption of integrated ERP systems – as seen on the right – only accelerates its benefits.

Much like the skepticism about the cloud ten years ago and about robotic process automation (RPA) five years ago, skepticism about the future blockchain exists today. However, rising expectations for security, transparency and privacy by consumers all but guarantee the adoption of blockchain across industries. It is time for enterprises to take this new emerging technology seriously or risk falling behind your competition – and even new entrants not yet on your radar.

ISG helps enterprises improve efficiency and effectiveness through blockchain processes and technology. Contact us to find out how we can help you.

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HOW WILL THE DISTRIBUTED LEDGER CHANGE THE CUSTOMER
EXPERIENCE?**

SCOTT FURLONG

Scott Furlong is a partner at ISG with more than 25 years of experience helping companies transform their general and administrative functions, including finance and accounting, human resources and procurement. He has expertise in formulating strategies and designing alternative service delivery models (Global Business Services, shared services and outsourcing), transforming processes, driving organizational change and implementing emerging technologies, such as advanced analytics, mobile solutions, cognitive computing and cloud-based solutions. Scott leads ISG's Business Advisory Services practice and serves on the Americas Leadership team.

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