Toy Association White Paper

Is Blockchain the Toy Industry's Path to Playing Together?

Prepared by IBM in Collaboration with The Toy Association

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Blockchain struck society like a lightning storm on the plains. Fast and sudden. Over 10 years ago, a whitepaper was produced unveiling the technology and within seven years, families were discussing the topic over dinner, state legislators were passing bills, and CEOs were being asked for a "blockchain plan" by their Board. Some industries moved quickly to apply the capability, realize benefits, and progress networks from concept to production. Others continue to weigh the pros of transparency, digital contracts, and near real-time processing against the shift of working more closely with the value chain, applying new technology, and the integration with existing systems and data.

Fortunately, the toy industry has the opportunity to define how the collaboration, trust, and validation principles of blockchain will be applied at the asset, information and financial levels. The work done in other industries makes the path to benefits easier and offers lessons learned in building and presents the chance to leverage existing networks.

> "*Blockchain presents a unique framework to bring together suppliers, manufacturers, distributors, transporters, retailers and customers to deliver authentic products in a more efficient manner. The real question is will we see a full industry effort, or will we see smaller groups get together and collaborate?" – Paul Vitale, The Toy Association, Inc*

Playing well together with blockchain

To illustrate some of the most likely industry applications of blockchain in the toy industry, let's look through the lens of a fictitious toy manufacturer, ToyTime. ToyTime operates three divisions: child development, collectibles in *The Artisan's Line by ToyTime*, and characters for electronic games. Distribution is primarily in the United States with international sourcing for raw materials. They distribute to national and local retailers, sell directly through a growing ecommerce channel, and contract with several independent distributors. End consumers and distributors praise ToyTime for their great customer service, especially the way they personally handle ordering and delivery challenges.

While ecommerce and retail sales have exceeded plan and ToyTime continues to invest in the channels, many opportunities to improve the entire business remain. Specific needs include:

- Improving settlement time, effort and amount
- Meeting the desire of their consumers to know a product is authentic and made in a socially responsible manner
- Providing more visibility into the availability of a product

While further understanding needs and determining the best approach, ToyTime has uncovered other companies that have been addressing similar situations and already started looking at how blockchain can be a catalyst for change. Let's explore a few scenarios and identify what is being done in similar industries using blockchain.

Faster and more accurate settlement

Settlement for ToyTime officially begins upon receipt from a supplier and upon receipt by a customer. However, settlement starts much sooner than when it is time to send or receive funds. Most of the incoming and fulfilment orders are governed by a contract. Each contract can be unique and as a result, many people are involved in disputes on over/short/damaged/time delayed orders. Sometimes the disputes remain open for months which can leave a large amount of accounts open requiring a significant amount of time by the finance department to determine the correct amount due.

Blockchain moment #1: Can ToyTime encode the terms of the contract into a *digital* smart contract and based upon receipt and tolerance of over/short/damaged, pay and be paid at the agreed time and amount while providing the facts of the product movement onto a shared ledger for faster resolution?

Parallel situation: Today, major appliance providers have been working with a notable national chain order-to-cash process to drive down the number of disputes, resolution time, and dollars in question. Separately, ToyTime, like other major companies, could expedite their supplier onboarding process, lower their cost to maintain supplier information, and reduce supplier data errors with the use of the Trust Your Supplier solution. In fact, some companies are moving every one of their suppliers into a blockchain solution with support from SAP Ariba.

Spotlight fraud, recall with confidence

ToyTime's customers and consumers want to know the authenticity of the product. ToyTime wants to protect their intellectual property and take swift irrefutable action against illegal reproductions. Also, should a situation arise where they must do a recall due to a faulty part, raw material, packaging, or any other reason, ToyTime and the ecosystem want to move quickly and efficiently to minimize any risk of harm.

Blockchain moment #2: Can ToyTime digitize and share the journey from raw material to customer's hands and, when necessary, provide a rapid way to determine where products are located for recall?

Parallel situations: The mining industry has been working on conflict mineral blockchain efforts for a couple years. The ability now exists to track resources through the supply chain capturing each event and the critical data to validate and verify authenticity. The items not identified in the network are then known as *not authentic* allowing downstream buyers to make informed decisions. The emergence of digital twins and QR code use have helped to tell a product's story, authenticity, and journey to the consumer. For recalls, Walmart's blockchain learnings can be shared across industries. When conducting a trace on leafy green vegetables, identification of the product's origin dropped from nearly seven days down to 2.2 seconds with blockchain. This allows for faster recall execution and consumer notification in the event of a foodborne illness threat.

Improve inventory levels

In recent corporate earnings reports, the word *conservative* has been used to describe inventory levels. What is conservative in a period where supply chains have been greatly disrupted due to demand swings? ToyTime has had difficulty ensuring supply and therefore is pushing out

delivery dates and reallocating product using their best analytics tools with the data they have in-house.

Blockchain moment #3: How can ToyTime understand material and finished goods inventories up and downstream while also seeing sales information to best match demand and supply?

Parallel situations: Today large consumer products companies are tracking the ocean journey of their materials and finished goods using blockchain. A large distributor has also used blockchain and sensors in moving inventory downstream and adjusting transportation and ordering levels based on up to the minute inventory levels. Over time, the analytics on blockchain data unveiled an opportunity to reduce one shipment per week while maintaining stock levels.

Sharing your toys

Companies like ToyTime see the value that blockchain can play as they look for next generation's solutions. Getting started involves making sure the return on investment is clear for all participants, the identification of the critical data can be shared, and a methodology can be followed to bring the formation and expansion of the network.

As the toy industry looks ahead, how will large and small retailers, suppliers, regulatory agencies, associations, testing agencies, financial institutions come together to improve customer experience, lower costs and risks? Toy industry leaders working together can unlock the benefits of blockchain for the entire industry.

Note: This content is also published here: