PRESS RELEASE

GS1, IBM and Microsoft Announce Collaboration to Leverage GS1 Standards in Enterprise Blockchain Applications

GS1 Open Standards Promote Interoperability of Blockchain Applications
Across Supply Chain Networks

Brussels, 13 September 2017: GS1®, the global business communications standards organisation, today announced a collaboration with IBM and Microsoft to leverage GS1 Standards in their enterprise blockchain applications for supply chain clients.

GS1's global standards for identification and structured data enable blockchain network users to scale enterprise adoption and maintain a single, shared version of the truth about supply chain and logistics events—increasing data integrity and trust between parties, and reducing data duplication and reconciliation.

Data stored or referenced by blockchain networks can be structured for shared communications and interoperability through the use of standards. For example, the GS1 and ISO open standards of Electronic Product Code Information Services (EPCIS) and Core Business Vocabulary (CBV) enable standardised exchange of data and item-level tracking.

"What attracts many organisations to blockchain technology is the possibility of sharing data across corporate boundaries while maintaining a high degree of rigor and accuracy," said Robert Beideman, Vice President – Retail, GS1. "We hope to make this possibility a reality for businesses by working with dedicated technology and industry partners—and together promoting a common business language."

Standards in the Supply Chain

GS1 Standards offer global businesses like Walmart the ability to expand blockchain networks to suppliers, distributors and other ecosystem partners, unlocking the business value of data sharing, transparency, visibility and trust. IBM and Walmart have successfully used blockchain technology in a pilot test to enhance the traceability of two food commodities in two different countries: mangoes in the U.S. and pork in China.

"Our pilot projects in the U.S. and China demonstrated that blockchain can strengthen existing food system safeguards by improving traceability. Using blockchain, we were able to track a product from retail shelf back through every stage of the supply chain, right to the farm gate, in seconds instead of days or weeks," said Frank Yiannas, Vice President of Food Safety, Walmart. "Building blockchain traceability solutions on a common set of standards can help us scale across our complex, global supply chain and build networks based on transparency and trust."

"One of the key benefits to blockchain in the enterprise is the trust it delivers, which enables more efficient and complete sharing of the critical data that drives enterprise transactions. By removing the barriers that can be caused from disparate entry systems, that trust is solidified even further, said Brigid McDermott, vice president, blockchain business development, IBM. "That's why we are working with clients like Walmart and collaborating with other industry leaders to implement GS1 open standards into the work that we do."

"The challenge with trade finance and supply chain today is that participants are forced to use disparate digital systems bridged by paper-based processes, with little or no common standards. These digital 'islands' work well when everyone is on the same network, but as soon as there is a lack of connectivity with certain participants using different solutions, things quickly revert to paper and manual processing," said David E. Rutter, CEO of R3. "We see distributed ledgers as the means to provide that connectivity between participants across business networks."

"Leveraging existing GS1 Standards to structure event information will enable blockchain-based supply chain implementations to be more interoperable and will simplify the capture and description of events that are written against smart contracts," said Yorke Rhodes III, Global Business Strategist, Blockchain, Microsoft. "Collaborating with partners to implement solutions on blockchain using standards already in place for item-level tracking is the quickest path to production."

For more information about GS1 and GS1 Standards, please visit www.gs1.org.

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About GS1

GS1® is a neutral, not-for-profit organisation that provides global standards for efficient business communication. We are best known for the barcode, named in 2016 by the BBC as one of "the 50 things that made the world economy". GS1 Standards improve the efficiency, safety and visibility of supply chains across physical and digital channels in 25 sectors. We enable organisations of all types and sizes to identify, capture and share information seamlessly. Our scale and reach – local Member Organisations in 112 countries, 1.5 million user companies and 5 billion transactions every day – help ensure that GS1 Standards create a common language that supports systems and processes across the globe. Find out more at www.gs1.org.

About IBM

IBM is the leader in open-source blockchain solutions built for the enterprise. As an early member of Hyperledger, an open source collaborative effort created to advance cross-industry blockchain technologies, IBM is dedicated to supporting the development of openly-governed blockchains. IBM has worked with more than 400 clients across financial services, supply chains, IoT, risk management, digital rights management and healthcare to implement blockchain applications. For more information about IBM Blockchain, visit www.ibm.com/blockchain.

About Walmart

Wal-Mart Stores, Inc. (NYSE: WMT) helps people around the world save money and live better – anytime and anywhere – in retail stores, online and through their mobile devices. Each week, over 260 million customers and members visit our more than 11,600 stores under 59 banners in 28 countries and e-commerce websites in 11 countries. With fiscal year 2017 revenue of $485.9 billion, Walmart employs approximately 2.3 million associates worldwide. Walmart continues to be a leader in sustainability, corporate philanthropy and employment opportunity. Additional information about Walmart can be found by visiting http://corporate.walmart.com, on Facebook at http://facebook.com/walmart and on Twitter at http://twitter.com/walmart.

About Microsoft

Microsoft is the leader in open-source contributions on GitHub, and maintains an open cloud ecosystem supporting the most relevant blockchain solutions for enterprise and startups. Microsoft has collaborated to create enterprise tooling around existing open source blockchain solutions, making them more accessible to enterprise development. Examples include Ethereum, Hyperledger, Quorum and more. Microsoft also works closely with non open source blockchain vendors such as AlphaPoint, BlockApps, Chain, and R3. Enterprises can deploy blockchain consortium networks quickly allowing them to focus on building applications to solve business scenarios. For more information on Microsoft's work in blockchain, visit www.microsoft.com/blockchain.

About R3

R3 is leading a consortium with over 80 banks, clearing houses, exchanges, market infrastructure providers, asset managers, central banks, conduct regulators, trade associations, professional services firms and technology companies to develop groundbreaking commercial applications of distributed ledger technology for the financial services industry.
Operating in nine countries from all regions of the world, the R3 team is made up of financial industry veterans, technologists, and new tech entrepreneurs, bringing together expertise from electronic financial markets, cryptography and digital currencies.