

# QUARTZ

## AT THE INTERSECTION BETWEEN INDUSTRIES



### Building industry-spanning blockchain ecosystems with Quartz DevKit

By **R Vivekanand**, Vice President and Co-Head, TCS Financial Solutions

For decades, software providers have built extensive solutions targeted toward specific industries.

Today, the larger potential for business transformation exists at the intersections between industries, where significant inefficiencies remain. This is one of the key drivers for TCS setting up Quartz as a horizontal business unit offering blockchain-based solutions that span industry verticals including energy, utilities, supply chain, healthcare and, of course, financial services.

Quartz was born out of the banking, financial services, and insurance (BFSI) domain, cultivating ecosystems in OTC securities settlement, cross-border remittances, and corporate actions announcements.

Quartz blockchain technology is now being deployed to provide foundational support for ecosystems that span multiple industries. Quartz significantly lowers the cost and effort required to build ecosystems that involve all the relevant players, making possible an entirely new range of capabilities, services and products.

For example, at the intersection of Insurance and Healthcare, Quartz will speed up the settlement of insurance claims, significantly thereby bringing relief to citizens who otherwise have the arduous

task of following up with hospitals, diagnostic labs, and third-party insurance providers for settling their claims. Similar ecosystems are being built for the intersections between Insurance and other industries such as Automotive, Real Estate, and Retail. Through these ecosystems, we're making it easier for insurance products to be embedded throughout the economy, thereby also aiming to bring in positive societal impact.

Quartz will also embed financial services into the supply chain of other industries. Products and services are being enhanced with specific offers and built-in capabilities - for example, by providing channel financing in large supply chains in the manufacturing industry. Quartz solutions will soon be available for bill discounting, enabling better liquidity for SMEs.

By enabling innovative business models at the intersections between BFSI and the broader economy, Quartz will unlock immense value and generate potential for economic growth.

Moreover, Quartz, with its BFSI heritage, has demonstrated the ability to support robust, mission-critical solutions and ecosystems for critical infrastructure providers, making Quartz a natural fit for industries such as energy, utilities, and government.

## Quartz DevKit

Given that the global economy is set to increasingly draw on the power of business ecosystems, Quartz represents the fastest and most effective way of adapting to these transformational changes through rapid innovation, led by the creation of trust and transparency.

But before an enterprise can innovate within blockchain ecosystems, they first require skilled developers who not only understand blockchain technology, but who can also deploy robust business code that can be trusted by an enterprise and its ecosystem partners.

Quartz DevKit addresses the skillset challenge by providing a solution that generates high-quality code for customizable business requirements. The comprehensive code library, built with TCS' extensive experience across domains, enables rapid development using pre-built components that handle a wide range of typical business requirements across industry domains. For any further customization, the easy-to-use programming model ensures that developers can easily transfer existing skillsets (e.g. Java) when designing and building custom applications for their enterprise needs.

The result is predictable, robust, high-quality code that can be deployed in ecosystems serving the most demanding industries, at a level of trust that will enable blockchain to reach its highest potential, and at aggressive timeframes that enable our customers to spearhead change in their ecosystems.

Quartz DevKit is a mature, production-ready development toolkit that is already being used by customers including an Asia-Pacific energy utility and a payment infrastructure provider building mission-critical payment rails, as well as by the Quartz team itself, which uses the Quartz DevKit to build the entire range of Quartz Smart Solutions across diverse industry domains.

Quartz DevKit has built-in support for Hyperledger Fabric as well as R3, and Ethereum capabilities are planned for release in early 2020.

Using the capabilities offered by Quartz DevKit, organizations can quickly prototype, build, test, and deploy blockchain solutions in their IT landscapes in ways that will create value, delight customers, and propel business into the future. ■

## BaNCS Industry Network

***Pioneering initiative enables unified, cross-border adoption of Blockchains***

TCS BaNCS customers are partnering to explore and embrace blockchain technology in exciting new ways, building ecosystems together that break down silos, bring organizations together, and amplify business value through seamless collaboration.

BaNCS Industry Network, a private, permissioned blockchain network designed for TCS BaNCS customers, enables banks, custodians, CSDs, and insurance firms to seamlessly connect and share information and services through shared ledgers.

The cloud-based BaNCS Industry Network enables the rich functionality of TCS BaNCS to be integrated with Quartz blockchain solutions.

BaNCS Industry Network also facilitates rapid deployment of Quartz Smart Solutions for Corporate Actions, Reference Data, Settlements, Insurance Claims Processing and others. This transformative collection of "designed for blockchain" solutions enable organizations to launch proven solutions quickly, on a trusted platform that supports the cultivation of an ecosystem that includes a wide range of partners and customers. ■

### AT A GLANCE: BaNCS Industry Network

- Private, permissioned, cloud-hosted blockchain network
- Connects 400+ TCS BaNCS customers
- Bridges geographic markets and industry verticals
- Enables rapid launch of complete ecosystems

## Cross-Border Corporate Actions in Africa

*Award-winning initiative connects Nigeria's CSD with South African custodian Standard Bank*

**Central Securities Clearing System (CSCS) Plc.**, the central securities depository (CSD) of Nigeria, and **Standard Bank**, a leading custodian based in South Africa, completed a pilot to exchange information for cross-border corporate actions on the BaNCS Industry Network powered by Quartz blockchain.

In the pilot program, CSCS Nigeria placed corporate actions announcements for a wide range of events for equity and fixed income instruments on the BaNCS Industry Network running on Quartz blockchain. This gave Standard Bank instantaneous access to accurate corporate actions information that could be relied upon for further processing.

"Blockchain represents a unique opportunity for early adopters interested in transforming their businesses and industries. CSCS is excited to have worked together with TCS BaNCS and Quartz Solutions on this innovative pilot that has the potential of generating efficiencies in the financial markets," says Haruna Jalo-Waziri, CEO, CSCS Plc, Nigeria. "This is a significant step towards our vision of being the globally respected and leading central securities depository in the region."

"The innovative BaNCS Industry Network, which Standard Bank used to connect to Quartz Blockchain, enabled us to complete the pilot in record time," says Charl Bruyns, Head - Investor Services and Financial Institutions, Standard Bank Group. "The results of this successful technology pilot present exciting opportunities for Africa to deepen innovation, increase efficiency and drive integration in its capital markets. Standard Bank will continue to work with TCS to explore ways to develop future-ready digital solutions for all our stakeholders." ■

## Best Blockchain Breakthrough of the Year

*Pilot with CSCS Nigeria and Standard Bank SA on BaNCS Industry Network wins prestigious FTF award*



BaNCS Industry Network, powered by Quartz Blockchain, was named the Best Blockchain Breakthrough of the Year at the 2019 FTF News Technology Innovation Awards.

The award was given in recognition of the successful pilot on cross-border corporate actions processing conducted by Central Securities Clearing System (CSCS) Plc. and Standard Bank.

"Successful Business 4.0™ companies are finding innovative ways to leverage the power of ecosystems and deliver exponential value to their customers, and Quartz uses the power of blockchain technology to enable this," said R Vivekanand, Vice President and Co-Head, TCS Financial Solutions. "We are delighted to receive this award from FTF. It is a recognition of our thought leadership and ability to stretch the boundary of what is possible."

FTF (Financial Technologies Forum) is the leading provider of executive-level events and training focused on trends and initiatives in securities trading and operations. The prestigious FTF awards recognize the professionals, financial technology vendors, service providers, industry bodies, and regulators that have made significant strides and noteworthy achievements in operational excellence in the post-trade industry. ■

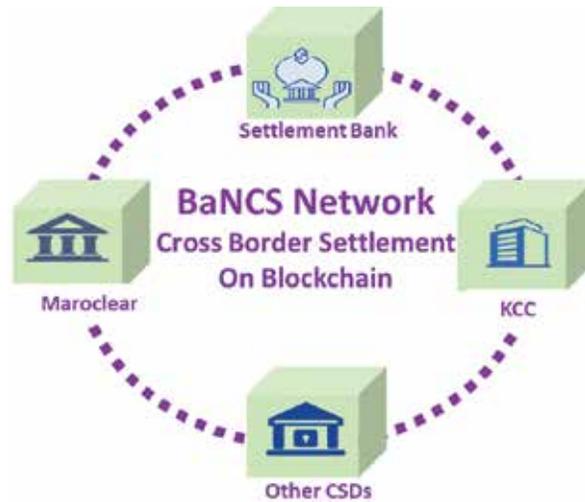
## World's First Cross-Border Securities Settlement on Blockchain

**CSDs in Morocco and Kuwait connect via blockchain to complete cross border securities settlement using Cash Coins**

Maroclear, the central securities depository (CSD) of Morocco, and Kuwait Clearing Company, the CSD of Kuwait, conducted successful tests on blockchain for cross-border securities settlement.

Both Maroclear and KCC are Market Infrastructure customers of TCS BaNCS, making it easy to bring them together on the BaNCS Industry Network running on the Quartz blockchain. The pilot tests were completed in less than six weeks.

The Quartz blockchain contained ledgers for each CSD to maintain segregated accounts pertaining to a set of equities and fixed income securities listed on the Kuwaiti and Moroccan markets. Using those ledgers, cross-border settlement instructions were matched and settled instantaneously, with the associated notifications on the status of the transactions available immediately to the respective CSDs. Real-time delivery-vs.-payment (DVP) cash settlement was accomplished using Cash Coins, a form of digital currency.



The solution demonstrated the ability for CSDs to process and settle transactions in "T+0" real time, leading to increased transparency and improved settlement efficiency.

"We have demonstrated that by using disruptive technologies like Blockchain, we can overcome limitations in prevailing business models and create new business opportunities for our customers," said Fathia Bennis, CEO, Maroclear.

"The seamless integration of the Market Infrastructure solution from TCS BaNCS with Quartz Blockchain now opens up new opportunities for us to explore the usage of Blockchain in the Kuwaiti market," said Khaldoun Al-Tabtabaie, CEO, Kuwait Clearing Company. ■



WEF, Davos



WFC, Marrakech

**The solution was showcased at the World Economic Forum (WEF) in Davos, Switzerland in January 2019 and at the prestigious World Forum Conference of CSDs in Marrakech, Morocco in April 2019.**



This special section was written and compiled with the participation of Malini Raman, Product Head, Quartz Blockchain Solutions and V. Anjana, Solution Architect.

