

Quartz™ – Powering Enterprises and Ecosystems through DLT & AI



Overview

Rapid disruption from digital technologies. The gradual blurring of geographical and market boundaries. The greater need for cooperation and collaboration. These are the global influences that are driving organizations today. Today's IT teams are focused on implementing robust systems that provide real-time, efficient transaction processing, instant updates and the ability to reduce costs. Smart companies will adopt a strategy of customer centricity, both in the range of business services offered and in the sophistication of solutions being provided to the customers.

In such a dynamic environment, cutting-edge technologies such as Distributed Ledger Technology (DLT) and Artificial Intelligence (AI) [including Machine Learning (ML)] can deliver a paradigm shift in the way businesses operate. These technologies are poised to bring real-world, transformational change for enterprises across industry verticals, and doing this by focusing on the art of the possible.

Organizations once afraid to dip their toes in the water of digital technologies have now fully embraced the practical, efficient use of these technologies. They have seen them streamline their businesses, increase speed and efficiency, and create new business pathways. And perhaps most importantly, these implementations haven't required a full platform transformation or the need to re-evaluate an entire organizational technology infrastructure.

However, there still are adjustments and accommodations to be made when adopting modern technologies. An inconsistent and evolving landscape has left many organizations reticent and uncertain about how to move forward. Having to navigate the landscape of niche players, large providers that simply white-label point solutions, and a lack of end-to-end connectivity and interoperability have resulted in failed implementations, and solutions that do not maximize the available technology.

Co-existence. Integration. Interoperability

From the very beginning, our product strategy for Quartz was centered around a solution led approach. Based on our extensive experience of implementing solutions globally, we knew that firms are best served by adopting a philosophy of co-existence, of retaining the best of their existing solutions, even while moving appropriate parts of the business into a distributed architecture. This approach helps organizations manage risks, save costs and progressively roll out new business services. The introduction of new technologies into an ecosystem demands that it integrates with all connecting systems, allowing the ecosystem to leverage standard messaging networks and data standards to manage the change.

Similarly, interoperability with multiple DLT platforms, and a judicious use of AI to drive business automation and productivity, are fast emerging as critical elements to ensure that organizations can create a competitive advantage for their business. Quartz can bring together all of these critical threads to create a thoughtful and measured approach to new technology adoption.

Powering Enterprise Transformation: Quartz

Quartz effectively lays these concerns to rest by offering solutions across diverse industries, that address the entire value chain - across development, integration and governance of ecosystems. Quartz comprises:

- **Quartz Smart Solutions** – Next-generation business solutions for ecosystem use cases architected using cutting-edge technologies such as DLT and AI.
- **Quartz Gateway & Command Center** – Enables the seamless integration of existing applications with DLT ecosystems/other networks and facilitates their administration and governance.
- **Intelligent Insights:** A GenAI-based solution that enables on-demand reporting using natural language queries, sentiment analysis, and generation of structured content from emails.
- **Quartz DevKit** – A low-code development kit that enables the development of high-quality code for different mainstream distributed ledger technologies.

Quartz Smart Solutions

Quartz Smart Solutions are comprehensive solutions that leverage DLT and AI for specific business processes across a variety of industries. The solutions are designed using flexible architecture with a unique on-chain/off-chain approach that allows the right parts of the business process (ones which would benefit from the use of DLT) to be deployed on blockchain, while other parts of the business continue to work outside of blockchain, on conventional technology.

Quartz Smart Solutions include those for Tokenization, Intelligent Insights (GenAI reporting), Digital Identity, ESG Compliance, Central Bank Digital Currencies (CBDCs), Digital Guarantees, Proxy Resolution, Crypto Services

Quartz Gateway and Command Center

Quartz Gateway is a single, smart channel that can help integrate applications across various DLT platforms, traditional systems, industry networks and ecosystems. Gateway uses simple REST APIs, thereby eliminating the need for large-scale and continuous changes to be made to their existing systems.

The Command Center helps administer and maintain oversight of the entire business ecosystem, providing a powerful visual representation of all the activities taking place within the ecosystem.

Intelligent Insights

The Intelligent Insights solutions from Quartz is a Generative AI-based solution that enables users generate personalized reports using multimodal data sets that includes data from the conventional database, blockchain ledgers as well as unstructured data from public sources, providing businesses with powerful insights that leverages real time information. The solution enables hyper personalization, by giving control to the user in defining user defined report templates and formats, as well as configuring the data display on screen... It also features a web crawler for real-time data extraction and sentiment analysis, enriching reports with business critical external perspectives. Email content is automatically transformed into standardized formats such as JSON and ISO, or into reports, thereby driving digital transformation through process automation and streamlined workflows.

Quartz DevKit

Quartz DevKit, an intuitive, low-code smart contract development kit, is designed to help software developers in writing blockchain code. DevKit can generate, compile, package, and deploy business code on a variety of underlying blockchain technologies including Hyperledger Fabric, Corda, Ethereum, Quorum, and Tezos, among others. It comprises a standard set of architectural features covering security, data privacy, access controls, business and technical domain libraries, audit trails, unit testing, and logging framework. These features allow for automatic code generation, which roughly translates to more than 60% of the overall smart contract code, significantly enhancing productivity in the build phase and aiding a quicker GTM for the customer.

Benefits

Using Quartz, organizations can:

- Create decentralized architectures to power their business ecosystems
- Automate business processes and functions with Smart contracts, AI/ML
- Eliminate data duplication and associated reconciliation issues
- Ensure data integrity with cryptographic encryption of data, making it immutable
- Deploy solutions on multiple hyperscalers or in an on-premise/hybrid model.

Backed by awards from Financial Technology Forum (Best Fraud Prevention Solution), Juniper Research (Gold Winner for Digital Identity Innovation at the Future Digital Awards for Fintech & Payments), The Asian Banker Middle East and Africa (Best Fraud Prevention Technology Implementation Award), Asset Servicing Times (Outstanding Innovation Award), and recognition from Analysts (ranked #1 Best Performing Fraud Management Solution by IBS Intelligence, ranked #2 for delivery footprint and #3 for its vision and strategy by HFS Research, cited Leader in Everest Group PEAK Matrix Assessment and named 'Cryptonaut' by Celent in), Quartz can help you operate at the forefront of technology innovation and spearhead technology adoption successfully within your enterprise and beyond.

About Quartz

Quartz offers innovation-led solutions that combine the benefits of DLT and AI. Built on the premise of 'trusted intelligence', the solution addresses business challenges across the entire value chain including development, integration, and governance of ecosystems for various industries including Financial Services, Banking, Supply Chain, Energy & Utilities and eGovernance.

To know more about Quartz, please write to us at tcs.quartz@tcs.com, or visit our website <https://www.tcs.com/what-we-do/products-platforms/quartz>

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services (TCS) (BSE: 532540, NSE: TCS) is a digital transformation and technology partner of choice for industry-leading organizations worldwide. Since its inception in 1968, TCS has upheld the highest standards of innovation, engineering excellence and customer service.

Rooted in the heritage of the Tata Group, TCS is focused on creating long term value for its clients, its investors, its employees, and the community at large. With a highly skilled workforce of over 607,979 consultants in 55 countries and 180 service delivery centers across the world, the company has been recognized as a top employer in six continents. With the ability to rapidly apply and scale new technologies, the company has built long term partnerships with its clients – helping them emerge as perpetually adaptive enterprises. Many of these relationships have endured into decades and navigated every technology cycle, from mainframes in the 1970s to Artificial Intelligence today.

TCS sponsors 14 of the world's most prestigious marathons and endurance events, including the TCS New York City Marathon, TCS London Marathon and TCS Sydney Marathon with a focus on promoting health, sustainability, and community empowerment.

TCS generated consolidated revenues of over US \$30 billion in the fiscal year ended March 31, 2025. For more information, visit www.tcs.com

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