LTIMindtree

Get Quantum Ready with LTIMindtree

IBM GSI Webinar

October 2025

Agenda

1. LTIMindtree Overview
2. LTIMindtree BFSI footprint
3. LTIMindtree: A Quantum ready partner
4. Typical Enterprise Quantum Journey
5. Potential Quantum application areas in Banking and Finance
6. Finance Use Cases Solutions

LTIMindtree Overview

Unmatched Core to Experience Transformation

LTIMindtree is a global technology consulting and digital solutions company that helps enterprises transform and innovate for future growth. Combining engineering and experience DNA, we enable businesses to reimagine models, accelerate innovation, and thrive in the digital marketplace—getting to the future, faster.

$4.5Bn+	740+	84000+	40+
Revenue	Clients	Associates	Countries

Trusted Quantum Partner for Financial Innovation

LTIMindtree partners with leading global banks, insurers, and asset managers to drive innovation in financial services. Our quantum solutions power fraud detection, portfolio optimization, and claims management for top-tier clients across the UK, US, and beyond.

LTIMindtree BFSI footprint

Global Banks	US Based Banks	UK Based Banks	Private Banks	Development Banks	Payments
50% of top 100	14 of Top 20	6 of the Top 10	20 of the Top 50	3 of the Top 5	3 of the Top 10

Our global footprint helps us serve **170+ BFSI clients**

LTIMindtree leads the BFSI sector with **$1.6B revenue** and 25,000+ experts, driving digital innovation worldwide

LTIMindtree is recognized as a **Leader in Asset & Wealth Management** in IT Services and Payments by Everest Group

Rebuilt global payment systems processing **$1B daily**, reduced costs by 10%, and sped up product rollouts by 25%

LTIMindtree

LTIMindtree: A Quantum Ready Partner

Quantum Ready Partner

Deep Quantum Expertise

15+ strong team including **4** PHDs, Research Engineers, Quantum Native Developers, ML engineers and Domain experts

Combined **30+** Quantum research papers and Patents

Ready base models – Portfolio Optimization, Fraud Detection, BSO, CVRP, Roster Scheduling, PQC etc.

Integrated Global Quantum Ecosystem

Member of world-leading Research hubs (**IQN, QCI3** in the UK; **NQM** in India) partnership with eminent universities

National Quantum Mission

UNIVERSITY OF OXFORD

University of Strathclyde

INDIAN INSTITUTE OF TECHNOLOGY MADRAS

1st Indian GSI to be part of IBM Quantum Network

IBM

Industry focused applied research

'Science Led and Enterprise Driven' Applied research approach towards building Industry focused Use case base models, Assets and accelerators, Jumpstart framework

IBM related endeavors

QML Prototypes:

- Transaction Fraud Detection
- Health Risk Assessmemt
- Energy Demand Forecasting

Claim Handling Assignment Optimization solution for a Dow 30 P&C Insurer.

Benchmarking and Error Mitigation accelerator.

Extensive Collaboration Engagements

Promote Quantum Awareness and explore collaboration opportunities with the wider community through

- Conferences
- Round tables
- Industry POVs
- Hackathons
- Jumpstart framework
- Relevant business POCs

Successfully conducted workshops for **50+ customers**

LTIMindtree: Quantum-ready partner to fast-track Quantum value

Quantum Empowered Customer

Quantum Awareness → **Quantum Preparedness** → **Quantum Value**

LTIMindtree Services

1 Quantum Advisory

- Quantum Strategy and Roadmap
- Quantum use case Identification
- Quantum security briefing & Insights
- Quantum-Safe action plan
- Quantum Talent cultivation
- Quantum ecosystem & Partnerships

2 Accelerated Quantum Innovation

- POC Feasibility study and POC Planning
- Accelerated Quantum POC Development
- Quantum Benchmarking and value validation
- Quantum scaling and Integration Exploration

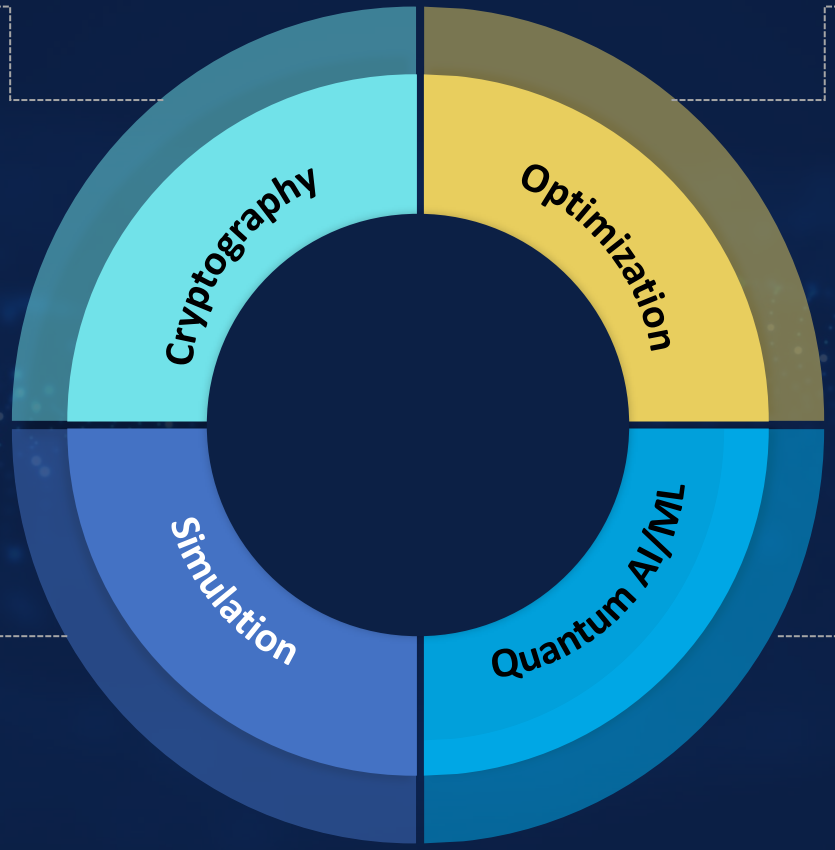
3 Quantum-Safe Cybersecurity

- Quantum-Safe Discovery and assessment
- Quantum-Safe POCs, testbed
- Quantum-Safe Solutions

Continued advisory and strategic support on Platform Access, Market analysis, Talent development, Research support, Roadmap realignment

Potential Quantum application areas in Banking and Finance

- Quantum Safe Discovery and Assessment
- Quantum Safe solutions*
  1. Post Quantum Cryptography
  2. Quantum Key Distribution
  3. QRNG + quantum-safe HSMs
  4. Crypto-agile solutions
  5. Regulatory Compliance



- Portfolio Optimization*
- Credit Risk Assessment
- Dynamic Credit Lining
- Asset liability mapping and optimization
- Claim handling assignment maximization*

- Market simulation and risk analysis
- Asset Pricing

- Fraud detection*
- Credit Scoring
- Customer targeting and prediction modelling

***LTIM Prototype Ready**

LTIMindtree Finance Use Case Solutions

- Credit Card Transaction Fraud Detection
- Quantum safe assessment and solution
- Quantum Error Mitigation (QEM)

Credit Card Transaction Fraud Detection

Problem

Overcome the limitations of Classical machine learning algorithm in classification of Imbalanced Data to have better Precision and Accuracy and could lead to False Positives and False Negatives.

Why Quantum?

Quantum Machine Learning (QML) leverages quantum mechanical phenomena like Superposition and Entanglement, which helps QML models uncover the hidden patterns and co-relations between data points of complex, inadequate, and imbalanced data sets.

Experiment

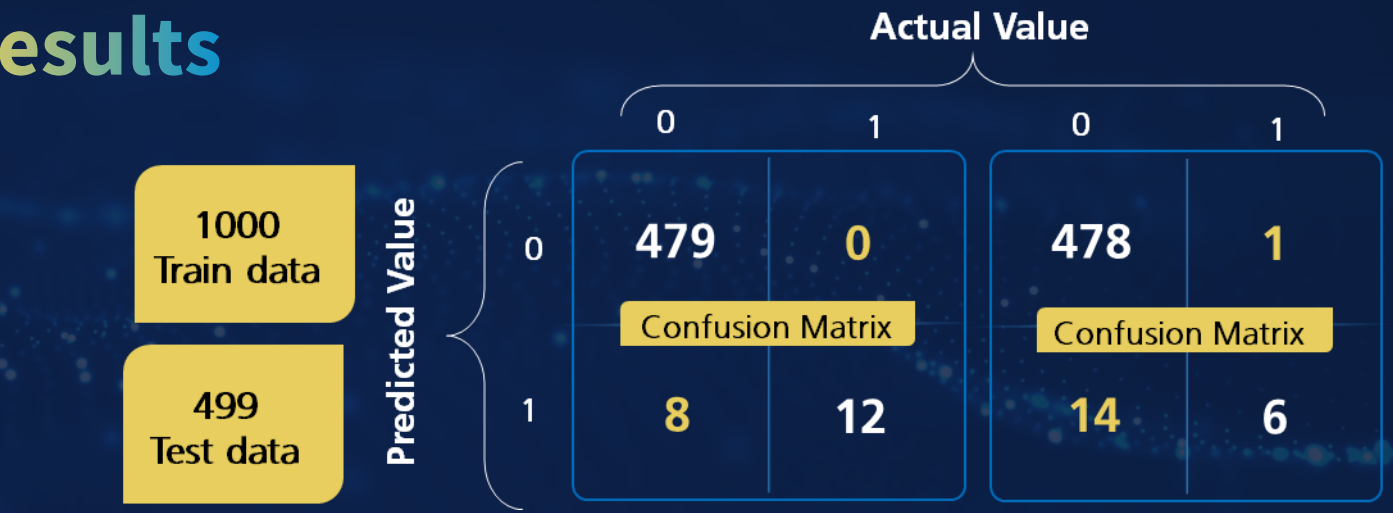
We have used Quantum Support Vector Machine algorithm for the Transaction monitoring / Fraud Detection use cases that is based on the classification of labeled data.

Quantum SVM experimentation generated promising results on **IBM Quantum system**, such as improved prediction accuracy in the case of transaction fraud detection benchmarked against Classical SVM.

Results

1000 Train data

499 Test data



Quantum SVM	Precision	Recall	F1-Score	Support
0	0.98	1.00	0.99	479
1	1.00	0.60	0.75	20
Macro avg	0.99	0.80	0.87	499

Classical SVM	Precision	Recall	F1-Score	Support
0	0.97	0.997	0.98	479
1	0.86	0.30	0.44	20
Macro avg	0.91	0.65	0.71	499

Business Impact

- ✓ Improved prediction accuracy and classification of imbalanced dataset
- ✓ Reduction in false positives and false negatives
- ✓ Significantly improved compliance adherence

Quantum safe assessment

LTIMindtree's Quantum-Safe Service Offerings

01

Discover and Assess

Quantum-Safeguard Discovery and Assessment (QSDA)

- Comprises inventorying of cryptographic assets and their risk assessment using accelerators and automated tools
- It provides NIST CCOE-aligned recommendations to migrate to Post-Quantum Cryptography (PQC) solutions

02

Research and Prototype

Quantum-Safe PoCs

- Provides small-scale prototypes to assess the integration, effectiveness, and performance of quantum-safe solutions
- These include pilot evaluations for informed decision-making and risk mitigation

03

Strategize the Migration

Quantum-Safe Migration Planning

- Creates a detailed phased migration strategy of the organization's cryptographic assets to PQC with crypto agility
- Inputs from QSDA, Quantum-Safe PoCs, organizational priorities, roadmaps of internal and 3rd part vendors (IT and Apps)

04

Deploy and Test

Quantum-Safe VPN and Applications

- Quantum-safe VPN solution to safeguard enterprise SD-WANs, networks between data centres and offices
- Quantum-safe Applications enables upgrading cryptographic libraries to utilize NIST approved PQC algorithms

05

Monitor and Maintain

Quantum-Safe Operations

- Comprehensive monitoring of migrated cryptographic assets for maintenance, and compliance
- Solution for scaling monitoring capabilities while addressing compliance, agility and threat protection needs

Partners

IBM

PQSHIELD

cisco

aws

FORTINET

Indian Institute of Technology Madras

University of Oxford

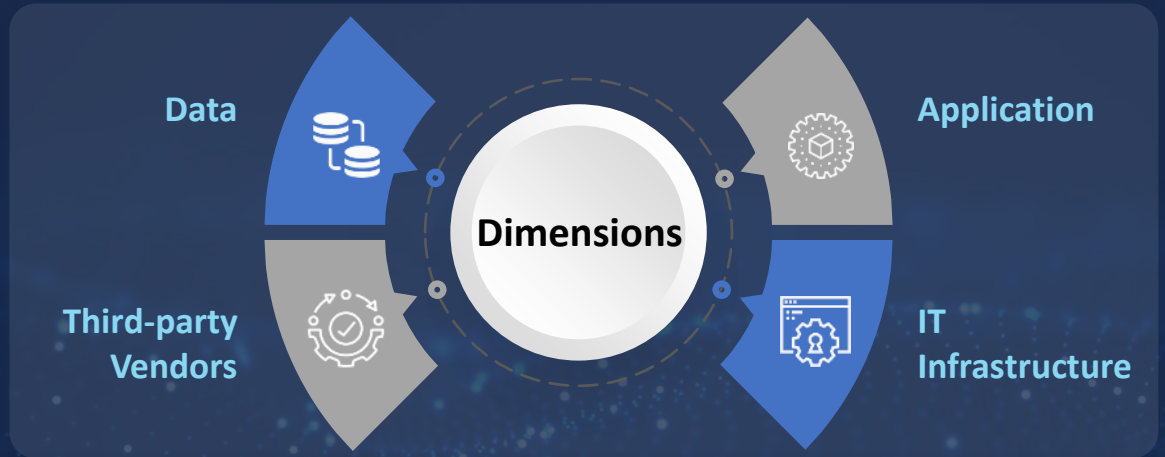
University of Strathclyde Glasgow

Heriot-Watt University

Quantum-Safeguard Discovery and Assessment (QSDA)

Discover Cryptographic Inventory

Risk Assessment: Create a risk register



Activities

- Comprises inventorying of cryptographic assets and their risk assessment
- Inventorying accomplished through consultation using our accelerators and automated tools
- IBM quantum-safe explorer for creating applications' cryptographic bill of materials (CBOM)
- IBM Guardium for identifying vulnerabilities on network
- Thorough risk assessment in line with NIST CCoE and FS-ISAC recommendations

Scanning Tools

IBM Quantum-safe Explorer

IBM Guardium Quantum Safe

Outputs

- *Inventory of current cryptographic assets across the 4 dimensions*
- *Reports from automated network scanning tools*
- *Reports from automated code scanning tools*
- *Quantum threat vulnerabilities of cryptographic assets*
- *Risk scores with recommendation to fix them*
- *Tailor-made strategy and migration planning towards PQC*

Quantum Error Mitigation (QEM)

Powered-Q for Quantum Error Suppression and Mitigation

Efficient placement & Qubit Mapping

Leveraging IBM Qiskit's Transpilaton and mapomatic packages

Error Mitigation

Along with our own AI-QEM we also Leverage Qiskit's ZNE and Readout error mitigation packages

Quantum Circuit Cutting & Knitting

Along with our Circuit cutting-knitting algorithms we also use IBM Qiskit's Knitting toolbox

- **AI-Based Quantum Error Mitigation**: Uses deep learning models to mitigate the error in the quantum computation.
- **Scalable & Fast**: Validated on circuits with 100+ qubits on IBM Quantum hardware; single-pass inference ensures low latency.
- **Data Generation & Training**: Pre-trained on noisy simulations, fine-tuned with real QPU results for device-specific robustness.
- **Utility-Scale Benchmarking**: Proven effective and scalable on large, real-world circuits for practical quantum applications.

Getting to the
future, *faster*.
Together.