

How QualityKiosk's Bank-in-a-Box Framework Achieved 95%+ Resiliency for a Leading Global Bank



Client Overview

The client is one of the leading global banks, with a market capitalization of over USD 170 billion and a customer base exceeding 120 million. Known for its innovative digital offerings and extensive retail reach, the bank operates in a highly competitive and regulated environment, where service reliability is as critical as innovation.

Engagement Overview

Facing recurring outages, scalability limits, and regulatory pressure, the bank realized it needed an NFR-led transformation to restore customer trust. QualityKiosk deployed its Bank-in-a-Box framework to engineer a resilient, scalable, and compliant ecosystem, eliminating service disruptions, achieving zero high-severity defects, and scaling to meet surging demand.

Business Challenges

Several systemic, non-functional gaps were undermining the bank's digital transformation momentum, such as:

- **System Instability:** Core digital channels such as mobile banking, net banking, and customer service platforms experienced frequent outages, slowdowns, and unplanned
- **Eroding Customer Trust:** Persistent disruptions were damaging brand reputation and customer confidence.
- **Regulatory Scrutiny:** Multiple high-visibility outages had triggered close monitoring from banking regulators, creating urgency for demonstrable reliability improvements.
- **Scalability Limits:** Early application builds could not scale beyond 50 concurrent users; environment constraints blocked end-to-end journey testing.
- **Inadequate Test Data:** Insufficient volume and coverage of test data hindered robust scenario validation.
- **Poor Resiliency:** Systems lacked the ability to recover gracefully from internal, external, or infrastructure failures.



QualityKiosk's Solution and Approach

To ensure the bank's digital ecosystem was resilient, compliant, and ready from Day 1, QualityKiosk deployed its proprietary Bank-in-a-Box framework—an NFR-focused approach covering regulatory compliance, integration readiness, and reliability benchmarking across core banking modules.

We provisioned production-like NFR environments with smart service virtualization to remove dependencies while maintaining realistic transaction flows.

Our multi-stage approach involved:

Requirements and Readiness Assessment

- Collaborated with client stakeholders to define goals across functional accuracy, compliance, integration readiness, and reliability benchmarks.
- Mapped NFR requirements across all core banking modules.
- Established a shift-left, NFR engineering strategy embedded into every sprint and release cycle.

Bank-in-a-Box Framework Deployment

- Created a self-sufficient, full-scale test environment capable of simulating real-world traffic and failure scenarios without external system dependencies.
- Applied Smart Service Virtualization to mimic upstream/downstream integrations and control test data for high-volume reliability scenarios.
- Validated platform readiness to handle extreme concurrency without service degradation.

Resiliency and Reliability Engineering

- Leveraged Watermelon (QK's chaos testing partner solution) to inject controlled failures in infrastructure, network, and application layers, validating graceful recovery.
- Enhanced system resiliency from 75% to 95% through targeted defect fixes and configuration tuning.
- Ensured that recovery protocols met regulatory and operational SLAs.
- Used QualityKiosk's end-to-end testing solution, COMPAS for 40% faster and more efficient performance test execution and reporting.

Observability-Driven Quality Assurance

- Integrated Dynatrace APM and RUM into pre-production to measure system health, latency trends, and real-user experience under different operating conditions.
 - Delivered Day-1 observability readiness, enabling proactive issue detection in live environments.
 - Used telemetry insights to fine-tune alerts, thresholds, and monitoring rules before go-live.
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Early Defect Elimination and Governance

- Embedded Automated Build Validation Tests (BVT) into the early SDLC, detecting 52 reliability-impacting defects before integration.
- Applied governance controls to produce audit-ready test evidence aligned with compliance requirements.
- Followed a continuous lifecycle: Requirements → Build → Integrate → Test → Deploy → Hypercare → Operations, with NFR checkpoints at each stage.



Business Impact

Operational Improvements

- Zero Severity-1 functional or NFR defects in production post-implementation
- 68% time savings in early defect detection through automated BVT
- 80% improvement in auto-scaling efficiency
- 20 million customer records migrated in 4 hours (down from 24+ hours)
- Scalability leap to 80K (Mobile Banking), 60K (Net Banking), and 135K (Customer Service) concurrent users

Strategic Outcomes

- Reduced infrastructure costs by 30–40% through optimized capacity planning
- Elevated customer trust via consistent, disruption-free digital services
- Restored regulatory confidence through demonstrable system stability and compliance readiness
- Enabled zero-variance schedule adherence in a bi-weekly release model

By embedding NFR engineering into the bank's software delivery lifecycle, QualityKiosk's Bank-in-a-Box framework ensured the bank's digital platforms are scalable, fault-tolerant, and observability-ready.

This allowed the bank to reliably serve its 120 million customers, deliver a consistently superior user experience, and position itself as a truly #FutureReady institution.

About QualityKiosk Technologies

QualityKiosk is a focused Reliability, Cloud, AI, and Product Engineering solutions provider. The company, established in 2000, offers diverse services enabling organizations to adopt and adapt AI in Product Development, Quality and Reliability Engineering, CloudOps and Automation. In an AI-first world, QK synthesizes deep domain expertise with excellence in technology to consistently deliver great experiences for its customers' customers.

Operating in more than 25 countries and with over 3,500 employees, QualityKiosk helps leading brands in banking, capital markets, insurance, automotive & manufacturing, technology & digital natives, consumer goods, and healthcare to transform their digital capabilities.

The company's expertise and achievements have garnered recognition from esteemed global advisory firms such as Forrester, Gartner, and The Everest Group for innovative, IP-led solutions and the significant value those solutions deliver to clients.

For more information, visit:
www.qualitykiosk.com.