

Ensuring Seamless Functionality for the Next-Generation Credit Card Platform

ORGANIZATION

XTIVIA's client is a leading fintech company that provides credit card services to small businesses. The client enables businesses to issue physical, virtual, and single-use corporate credit cards to their employees while maintaining direct contractual agreements with businesses rather than individual users. These services are currently available in the U.S. and Mexico, with expansion into Brazil as a strategic goal.

The client offers a comprehensive financial platform that allows businesses to issue, manage, and track corporate credit cards for employees, providing seamless control over transactions and spending.

This project focused on validating and ensuring the seamless functionality of the next-generation version of their platform, designed to improve scalability, security, and regional compliance while offering enhanced card management features.

CHALLENGE

The transition to the next-generation platform introduced several quality assurance (QA) challenges that needed to be addressed to ensure scalability, performance, security, and regulatory compliance in the Brazilian market.

Key Challenges:

- **Scalability & Modernization:**
 - The existing monolithic architecture created challenges in scaling operations efficiently across different regions.
 - Transitioning to a microservices-based architecture required rigorous validation to ensure modularity and fault tolerance in card operations.
- **Complex Card Management:**
 - Testing workflows and lifecycle management for multiple card types (physical, virtual, and single-use) with dynamic status changes (Active, Suspended, Lost/Stolen).
 - Ensuring automated card status transitions based on business policies and user activity.
- **Integration with Third-Party Payment Processors:**
 - Validating seamless API integration with the payment processor for card issuance, real-time status updates, and transaction processing.
 - Meeting the strict SLA requirements, including sub-3-second API response times.
- **Transaction Handling:**

- End-to-end testing of authorization, posting, reconciliation, reversals, and refunds for millions of transactions per day.
- Testing edge cases, including pending transactions, timeouts, rejected/canceled transactions, and refund processing.
- **Compliance & Security:**
 - Ensuring LGPD compliance for secure data handling and privacy protection for Brazilian users.
 - Know Your Business (KYB) workflows for securely onboarding businesses.
- **Future-Ready Features:**
 - The need for a scalable and reusable QA framework to validate future features such as chargeback management and automated processes for handling expired cards.

These challenges highlighted the critical need for a structured QA approach to ensure the next-generation platform's stability, scalability, and compliance.

TECHNICAL SOLUTION

XTIVIA developed and executed a comprehensive QA strategy to validate the next-generation credit card management platform, ensuring its reliability and seamless operation.

Microservices Testing:

- **Card Hub:** Validated card creation, updates, and integration with the payment processor.
- **Ledger Hub:** Ensured accurate credit limit tracking and transaction posting.
- **Identity Hub:** Verified user roles, permissions, and admin functionalities.
- **Payment Hub:** Tested payment processing and refund handling.
- **Notification Hub:** Ensured real-time event-driven notifications.

Functional Testing:

- Validated all card types (physical, virtual, and single-use) across multiple lifecycle statuses.
- Verified automated card activation, suspension, and deactivation processes.

Integration Testing:

- Ensured seamless API communication between the platform and payment processor for card issuance and transaction handling.
- Validated webhook responses and batch file processing for transaction updates.

Performance & Load Testing:

- Simulated peak transaction loads (70–90 million daily hits) to verify platform scalability.

- Measured API response times to ensure strict SLA compliance.

Test Automation:

- Developed API automation scripts for regression and integration testing.
- Automated data generation for testing across various card statuses.

Compliance Validation:

- Validated data workflows for LGPD compliance.
- Tested KYB processes to ensure secure business onboarding.

Defect Management:

- Logged and tracked issues in Jira, ensuring rapid defect resolution through collaboration with development teams.

BUSINESS RESULT

The next-generation credit card platform successfully transitioned to a scalable, microservices-based architecture, ensuring seamless financial operations, regulatory compliance, and operational efficiency. XTIVIA's expertise in test automation, integration validation, and compliance testing enabled the client to expand confidently into the Brazilian market.

Key Outcomes:

Operational Efficiency:

- Automated workflows for card creation and transaction processing, reducing manual intervention.
- API automation accelerated testing cycles, ensuring consistent results.

Scalable Platform:

- Successfully validated microservices architecture, enabling millions of daily transactions without performance bottlenecks.

Enhanced Customer Experience:

- Ensured seamless functionality for Brazilian users with localized compliance (LGPD).
- Faster card issuance and efficient transaction processing improved customer satisfaction.

Regulatory Compliance & Security:

- Achieved LGPD compliance, securing user data and enhancing privacy protection.
- Validated KYB workflows to streamline business onboarding.

Future-Ready Architecture:

- Built a scalable QA framework to support upcoming features, including chargebacks and automated card expiration management.

KEYWORDS

Mulesoft, Postman, Docekerisation, Microservices, API Testing, API-based authorization, AWS-hosted microservices architecture

SOFTWARE

Mulesoft, Postman, Java, API integration scripts, Jira for logging and managing issues

ABOUT XTIVIA

At XTIVIA, we've been providing IT solutions and consulting services for over 30 years with a wide range of services, including technology assessments, IT service and asset management, software development, data analytics, cloud migration, DevSecOps, ERP, and enterprise content management. Dedicated to each discipline, ensuring that our clients receive the best possible service. Through strategic acquisitions, we've acquired talented people who are experts in their industries, passionate about what they do, and committed to providing exceptional service to our clients. Whether you need to improve your IT infrastructure or implement new software solutions, XTIVIA is here to help you achieve your business goals. XTIVIA has offices in Colorado, New York, New Jersey, Texas, Virginia, and India. www.xtivia.com