The Power of Process, People, and Tools When Testing a Complex Integration Landscape for a Very Large Initial Retail ERP Implementation
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Problem Statement

How do you test integration for a complex landscape of a initial implementation of a Retail Merchandising Enterprise Resource Planning (ERP) system?
26+ integration partner systems, including partners outside of Nike
Approximately 150 interfaces
5 Integration/middleware tools
Integration execution runs from batch scheduling
Implementation project around two years in length
What does an Retail Enterprise Resource Planning system do?

- Financial Planning for Stores/Regions
- Goods Planning for Concepts/Stores
- Master Data (Finance, Stores, Product)
- Procurement of Goods
- Delivery of Goods
- Inventory Management
- Pricing Changes (Markdowns, Promotions, etc.)
- Product Movements
- Sales Analysis
- Finance Functions including reconciliations with financial institutions, month end general ledger data to financial system of record
- Reporting – Internal and External

Most of us take for granted how goods end up in stores
Project Background – Core Partners

- Wholesale ERP - Master Data, Orders, Invoices, General Ledger
- Warehouse Management Systems (Nike plus third party logistics) – Deliveries, Returns, Inventory
- Brick and Mortar Store Systems – Master Data, Deliveries, Inventory, Sales, Returns, Transfers
- Online Sales – Master Data, Inventory Locator
- Markdown Optimization – Markdowns via Analytics
- Sales Tax System – Master Data
Project Background – Test Cycles

- QAST – Quality Assurance Systems Test (Early Testing)
- SIT 1 – Systems Integration Testing 1 (End-to-End)
- SIT 2 – Systems Integration Testing 2 (End-to-End)
- UAT – User Acceptance Testing
Triangle for Success – Key Points

PEOPLE

Single Points of Contacts for Teams
Retail Merch Functional QA Leads

TOOLS

Test data tracker
Shared test calendar
Dedicated QA team Room

PROCESS

Clearly defined responsibilities
Daily Stand-up Meetings
Quality Metrics Dashboard
Combine batch & interface testing
Process

- Design Reviews
- Test Execution Management
- Defect Management
- Code Promotion Management
- Daily Integration Stand-up Meeting
Tools

- QA Contact List
- Data Tracker
- Test Management
- Test Calendar
- Batch Execution
- QA Team Room
Integration Test Objectives

- Validate integration platform set-up and connectivity
- Validate interface data transformations
- Validate batch jobs – scripts, config, and security
- Validate batch schedule
- Validate that target systems can process files
- Validate that integration supports end-to-end business processes
Summary of Testing Results

- Metrics in QAST phase not broken out.
- 923 integration test cases executed in SIT 1.
- 818 integration test cases executed in SIT 2.
- Most production integration and batch issues/defects were minor or were, in fact, requirements changes.
Issues Encountered

- Late code delivery
- Significant blockage due to issues with core ERP functionality
- Slow resolution of some key issues
- Data quality issues
- Partner test system environment availability issues
- Turnover with testers from partner systems
- Slow turnarounds of test work with some test partners
- Retail Merch ERP test system had to be shared outside QA
Ideas for Improvements

- Don’t use mocked data
- Don’t share test system
- Improve use of boundary conditions
- Use combinatorial testing
- Better change management processes for test scenarios and test scripts
- Better performance testing of key interfaces
- Better engagement with some test partners
Questions