Case Study

Belgian Telecommunications Provider Achieves 76% Reduction in CAT Defect Density and Strengthens Release Quality

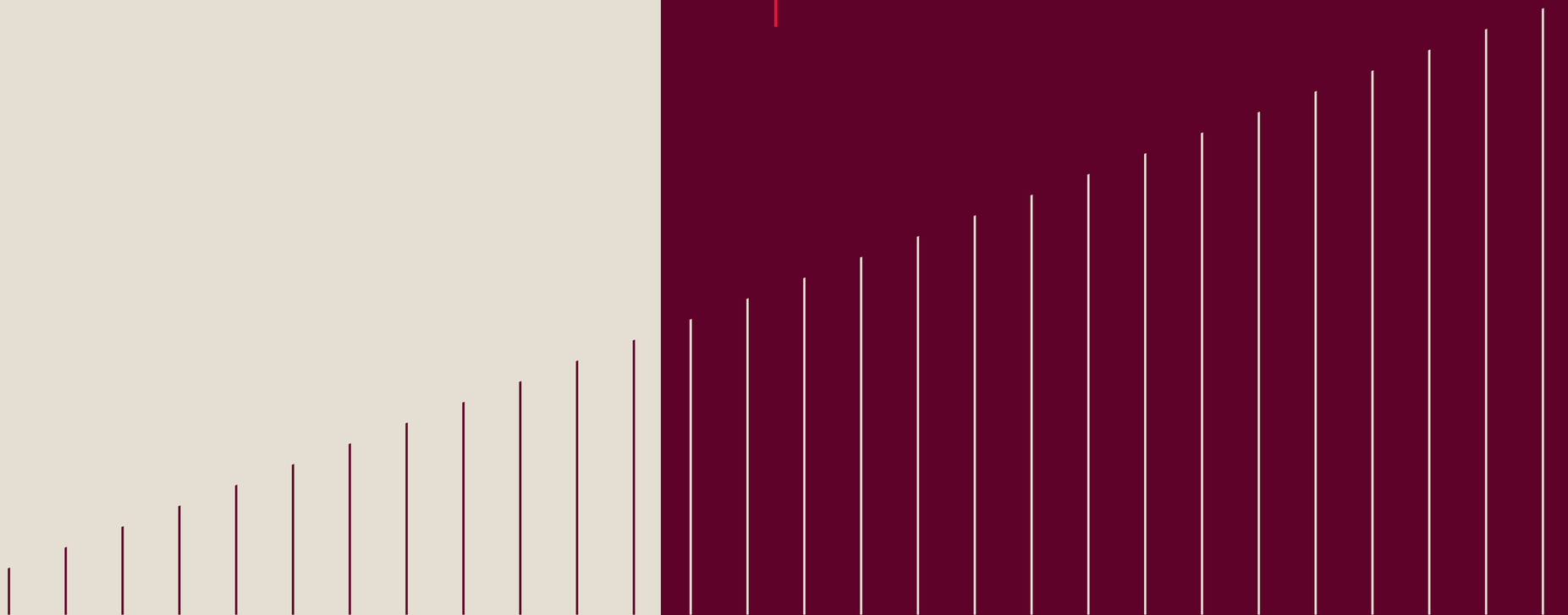
Scale at Speed™

Overview

A leading Belgian telecommunications provider faced significant challenges in maintaining process compliance and engineering best practices across its B2B and B2C programs. A weak Unit and System Testing (ST) approach and high defect density in Combined Acceptance Testing (CAT) impacted release quality and customer satisfaction. To address these issues, Tech Mahindra introduced structured quality gates, strengthened engineering governance, and enforced automated code quality checks. This strategic intervention improved release stability, improved stakeholder confidence, and delivered measurable improvements in delivery quality.

Resolved critical quality gaps by embedding structured governance and automation

Achieved tangible improvements in release reliability and customer experience



Client Background and Challenges

A leading telecommunications provider headquartered in Brussels operates across both B2B and B2C segments. Given the scale of their operations, the client faced significant challenges including:

Engineering compliance:

Ensuring strong engineering discipline and process compliance across multiple delivery programs.

Inadequate testing driving defect seepage:

Addressing weak Unit, ST, and System Integration Testing (SIT) practices, causing high Field Defect Density (FDD) and defect seepage into Combined Acceptance Testing (CAT).

Release risks impacting SLAs & KPIs:

Managing Service Level Agreement (SLA) and Key Performance Indicators (KPIs) while preventing release risks following a No-Go decision for a major 2025 rollout.

Solution and Approach

Tech Mahindra partnered with the client to enhance engineering quality and strengthen delivery governance across B2B and B2C programs. The approach included:

- **Quality Gate (QG) Checklist:** Established a comprehensive release-level QG framework with customized checkpoints to ensure engineering rigor and compliance before each deployment stage.
- **Domain-wide Assurance Coverage:** Sampled 30% of components across all domains to validate quality standards and reduce defect seepage into later test phases.
- **Automation-Led Code Quality Enforcement:** Mandated automated code analysis using SonarQube, improving early defect detection and enhancing coding discipline.
- **Centralized Action Traceability:** Utilized JIRA and Confluence for seamless action tracking, transparency, and continuous improvement across stakeholder teams.
- **Root Cause-Driven Defect Analysis:** Introduced structured defect categorization and “5 Why” analysis to eliminate repeat issues and uplift testing maturity during ST, SIT, and CAT.

Implemented a comprehensive quality gate framework with customized checkpoints

Enabled automation-led code quality checks for early defect detection

Introduced root cause-driven defect analysis using “5-Why” analysis

Business Impact

The transformation delivered measurable improvement in release quality and delivery confidence:

Restored release confidence:

The customer granted approvals for the March 2025 (R03-25) rollout and subsequent releases. They expressed appreciation for the implementation of new ways of working and the incorporation of checkpoints that addressed systemic issues.

Significant quality improvement:

A 76% reduction in CAT defect density was achieved from June 2024 (R06-24) to April 2025 (R04-25), minimizing defect seepage and strengthening testing outcomes.

Implemented release-level engineering checks:

The Quality team implemented structured release-level engineering checks to ensure the quality of deliverables, strengthening validation processes across ST, SIT, and CAT phases.

Stronger operational performance:

Improved adherence to SLAs and KPIs, enhancing the Quality Index.

Business continuity and trust:

Increased confidence in predictable delivery enabled a two-year contract extension, without initiating a formal Request for Proposal (RFP).

Measurable Results:

Release-level engineering checks implemented by QC to ensure quality of deliverables

76% decrease observed in CAT Defect Density from June 2024 (R06-24) to April 2025 (R04-25)

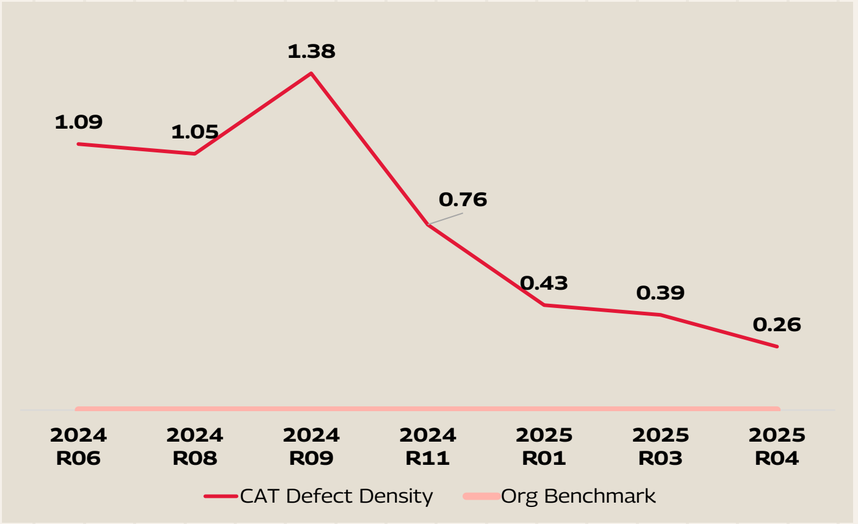
Release level engineering checks implemented by QC

Check Point	Practices Then R07-23	Practices Now	R07-23	R07-24	R03-25	RAG
Availability of HLD and LLD	HLD and LLD documents evident on confluence	HLD and LLD documents evident on confluence	75%	100%	100%	
Acceptance criteria identified for requirements	Blank Acs against requirement/story	ACs identified, however needs to be effective. Hence, RAG is RED	27%	67%	78%	
Requirement traceability to design and test cases	Requirement traceability from design to test cases evident in Jira	Requirement traceability from design to test cases evident in Jira	90%	100%	100%	
Automated code reviews done & evidences available	Missing Code/Peer reviews	Integrated code reviews done in Version control tool	46%	76%	90%	
Unit test cases scenarios available and results captured	UT scenarios not evident	UT Scripts / scenarios evident for testing	33%	100%	89%	
Availability of ST cases, defects and results	UT synonymous to ST	ST cases and defect tracking evident for testing	19%	75%	89%	
Formal design review evidences available	Informal / Missing design reviews	Performing design reviews needs consistency	42%	81%	76%	
Exception conditions identified/documented	Missing Exception Conditions	Handling exception conditions needs consistency	17%	80%	78%	
Code Quality score in SonarQube	SonarQube code quality checks not done	SonarQube checks with 80% target are performed	40%	75%	91%	

90 - 100% | 75- 89% | <75%

Note: CAT**:** Combined Acceptance Testing ST: System Testing, SIT: System Integration Testing, FDD: Field Defect Density, RCA: Root Cause Analysis, HLD: High level Design, LLD: Low Level Design, AC: Acceptance Criteria, UT: Unit Testing

Combined Acceptance Testing (CAT) Defect Density



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