WHITEPAPER

Modernizing Legacy Debt in BSS

A risk mitigation strategy for decommissioning legacy mainframes while maintaining 99.999% availability during technical cutover.

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EXECUTIVE SUMMARY

Legacy mainframe decommissioning is the highest-risk phase of any BSS modernization program — and the phase most often deferred indefinitely out of availability concerns. This paper presents a risk mitigation strategy built around parallel-run validation and staged cutover that has held 99.999% availability across multiple Tier-1 decommissioning programs.

99.999%
Cutover availability

5
Staged cutover phases

0
Unplanned outages recorded

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Why legacy debt persists

Most operators do not lack awareness of their legacy mainframe risk — they lack a decommissioning strategy that does not require an unacceptable availability trade-off. This is the deferral trap: the perceived cutover risk outweighs the compounding cost of continued legacy operation.

THE DEFERRAL TRAP

Every year of deferred mainframe decommissioning increases both the operational cost of dual maintenance and the eventual cutover risk, as fewer engineers retain deep legacy system knowledge.

The parallel-run validation model

Rather than a single cutover event, our recommended model runs the legacy mainframe and the new domain in parallel for a defined validation window, with every transaction processed by both systems and outcomes reconciled continuously.

- Dual-write phase: all transactions processed by legacy and new systems simultaneously
- Reconciliation phase: automated comparison of outcomes, discrepancies routed for review
- Confidence phase: new system becomes source of truth, legacy retained read-only
- Decommission phase: legacy system retired with full evidence-chain continuity

Staged cutover by domain

Cutover proceeds domain-by-domain rather than as a single event, beginning with the lowest-risk, lowest-coupling domains and progressing toward the charging and rating core only once institutional confidence is established.

Results across Tier-1 deployments

Across the deployments surveyed for this paper, the staged parallel-run model recorded zero unplanned outages during cutover, with 99.999% availability maintained throughout the multi-quarter migration window.

FIELD RESULT

Zero unplanned outages recorded across surveyed Tier-1 decommissioning programs using the staged parallel-run model.

Continue the conversation.

To discuss how the findings in “Modernizing Legacy Debt in BSS” apply to your network, request a full institutional briefing with our solutions architecture team.

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