

From 400 Lines of SQL to Business-Owned Decision Logic

A national bank's capital markets team reclaims speed and control over loan designation



At a glance



Institution Type

Top-tier national bank with large capital markets and secondary mortgage operations



Primary Challenge

Loan designation logic buried in 400+ lines of opaque SQL with 6–8 week change lead times and ~\$75K per modification



Solution

Sapiens Decision – SQL replaced with transparent, business-managed decision models



Key Outcome

Lead time reduced from 6–8 weeks to 1–2 weeks; technology cost for changes reduced to near zero

**6–8 weeks
→ 1–2 weeks**

Change lead time

~\$0

Cost per rule change (from \$75K)

Company Background

One of the largest residential mortgage servicers and capital markets participants in the United States manages a complex portfolio of loans continuously evaluated for designation – determining whether each loan is held for investment (HFI) or held for sale (HFS), and whether it qualifies for residential mortgage-backed securities (RMBS) and other structured products.

The Capital Markets Finance team ran a nightly batch process to evaluate every loan in the portfolio against eligibility and prioritization criteria. This process was foundational to the firm's ability to package loans for secondary market transactions, manage its hedge position, and respond to investor requirements. Over time, however, the infrastructure supporting this process had become a significant liability.

The Challenge

The logic governing loan designation had been encoded in over 400 lines of SQL – a waterfall structure that was functional but deeply problematic to maintain or evolve:

- Rule order within the SQL determined designation priority, meaning any change to priority required careful impact analysis across the entire codebase – a task requiring weeks of specialized IT engagement.
- Any modification to loan selection criteria demanded a formal technology initiative: 6–8 weeks of lead time and approximately \$75,000 in cost per change.
- No version control made it impossible to audit which logic was in effect at any historical point – a risk

exposure in regulated capital markets operations.

- Manual intervention was required to stop the batch mid-process to accommodate overrides, introducing operational risk into a process that needed to run reliably every night.
- The opacity of the SQL made it difficult to confirm whether loans in RMBS pools accurately represented their quality profile, creating potential misrepresentation risk.

The Solutions

The Capital Markets Finance team replaced all SQL-based designation logic with a suite of transparent, business-managed decision models. The redesign addressed both technical debt and the operational model simultaneously.

All 400+ lines of SQL were converted into discrete decision models, each answering a specific designation question in plain, auditable business logic. The models were orchestrated sequentially rather than as a waterfall – every designation a loan could qualify for was evaluated independently, with a dedicated priority model determining which took precedence.

This architecture meant new designation categories could be added without disrupting existing rules, and that priority adjustments were managed in a single, dedicated model rather than by reordering SQL logic. Critically, the business team – not IT – became the owner of the logic, with the ability to update criteria and priorities without opening a technology initiative or waiting for a sprint cycle.



Any change to loan selection criteria required at least 6–8 weeks of lead time and approximately \$75K in technology cost. With the new decisioning platform: 1–2 weeks and almost zero technology expense.

–Capital Markets Finance Leader

Outcomes

- **Change Lead Time.** Reduced from 6–8 weeks to 1–2 weeks for loan selection criteria updates.
- **Technology Cost.** Near-zero cost per logic change, down from approximately \$75,000 per modification.
- **Operational Risk.** Manual batch interruptions were eliminated; the nightly process runs without manual intervention.
- **Audit & Governance.** Full version control and historical evaluation capability introduced for the first time.
- **Transparency.** Business teams can view and understand designation logic in plain language, enabling faster review, better governance, and investor alignment.
- **Scalability.** The team built internal expertise that enabled future capital markets initiatives – including RMBS, GNMA programs, and 40-year custom pool designations – to leverage the same infrastructure.

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About Sapiens

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