Graph Database Evaluation for a Financial Services Firm

The Challenge

A financial services firm built a mature graph data ecosystem, but the graph database they selected originally did not scale as multiple business-critical solutions relied on graph data. As application and business teams across multiple stakeholder groups expanded usage, data volumes and concurrent usage increased, exposing systemic limitations. Cluster instability disrupted downstream pipelines, introducing delays and uncertainty into time-sensitive analytical and operational processes; while limitations in reasoning and fine-grained access controls constrained the firm's ability to govern data, enforce consistent business logic, and safely expand analytical use across teams. An inflexible upgrade path left the client locked into outdated versions with unresolved bugs and pending feature requests. To compensate for gaps in platform capability, teams relied on manual processes and operational workarounds, requiring excessive time, stalling key workstreams, delaying decision making, and ultimately impeding the firm's ability to evolve its graph platform from a tactical solution into a trusted, enterprise-level foundation for analytics and insight. They needed to evaluate their graph database solution against industry-leading tools.

The Solution

To address the client's challenges, EK deployed an experienced graph database evaluation team leveraging our proprietary tool evaluation and selection matrix, developed and proven across more than 50 engagements with over 200 starter requirements, and implemented a transparent, stakeholder-driven framework to guide every phase of the platform assessment.

1. **Prioritized and Phased Requirements Framework:**

After establishing 50+ foundational features identified as baseline capabilities for enterprise-grade graph database platforms, EK leveraged a tailored requirements management tool that allowed the team to capture each stakeholder group's valuation of each requirement, ensuring alignment with business priorities for all stakeholders. These individual scores were averaged to produce a phased test plan: initial rounds focused on the highest-priority capabilities, with subsequent phases covering lesser-emphasized requirements.

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2. **Real-World Workload Simulation:**
Rather than synthetic benchmarks or documentation alone, the team used the firm's provided queries, rules, and datasets to replicate production-like workloads on all three graph database platforms. This approach surfaced instability and reasoning limitations under conditions closely mirroring the firm's day-to-day operations without the risk and overhead of full-production testing.

3. **Continuous Stakeholder Collaboration:**
EK facilitated an open dialogue with application owners, business analysts, and data engineers through more than 30 structured sessions, ensuring emerging needs and discoveries were immediately incorporated into the evaluation. Throughout the process, certain requirements progressed faster than anticipated, freeing up capacity to tackle more complex or blocked tasks. Rather than adhere rigidly to the original phase plan, the team restructured remaining work, front-loading additional simple requirements and allocating extra time for the most arduous scenarios. This adaptive cadence kept momentum high, prevented the project from stalling on a handful of edge-cases, and maintained stakeholder confidence in both the process and the eventual recommendation. This resolved alignment issues during evaluation itself, preventing rework and stalled decision making later in the process.

4. **Direct Vendor Engagement:**
To ensure the providers had an opportunity to address findings in real time, EK created and facilitated regular working sessions with each vendor. In these meetings, EK relayed metrics, evaluation results, overall usability observations, and upgrade-path concerns - providing each vendor the ability to speak to concerns and product roadmap commitment.

5. **Decision Artifacts and Outputs:**
EK translated the evaluation into decision-ready materials tailored to different stakeholder depths. These included vendor scorecards covering prioritized functional and non-functional requirements, presented at executive, working, and deep-dive levels to support direct comparison without repeated follow-up analysis. EK also produced two holistic migration roadmaps sequencing the transition of application teams while accounting for seasonal workload peaks and team-specific constraints. These recommendations were grounded in rigorous, production-like testing across 21 repositories (2.9 million to 1.1 billion triples), generating performance and stability benchmarks tied directly to the firm's real queries, rules, and datasets.

Content Management Strategy for an International Retailer

The EK Difference

EK's compact, cross-functional graph-data team combined deep domain expertise, advanced development skills, and seasoned solutions architecture experience, built from years of working with these technologies across various production environments. Beyond evaluation, EK developed custom migration plans and timelines through multiple engagement sessions for each stakeholder, accounting for each group's dependencies, workload schedules, and operational procedures so that each team would be prioritized to experience minimal downtime and as few complications as possible during migration. These strengths ensured the evaluation remained technically rigorous while staying practical for stakeholders by connecting platform findings to real operational constraints and migration realities so leadership could make the selection with confidence.

The Results

Beyond accelerating the platform decision itself, the evaluation reduced long-term platform risk and improved organizational readiness for execution. The evaluation surfaced potential risks early and resolved them within the decision process rather than allowing them to cause issues later during adoption or migration. Centralizing findings into a shared evaluation record eliminated parallel, uncoordinated tool assessments across teams and reduced the burden on senior staff to repeatedly contextualize tradeoffs to different stakeholder groups. As a result, leadership reached a decision with greater confidence, supported by evidence directly tied to production workloads, while application teams developed a shared understanding of why the decision was made. This alignment increased trust in the outcome and positioned teams to move forward with clarity.

Measurable Impact

The structured evaluation process was able to compress what has traditionally been an extensive and iterative vendor selection cycle into a single, evidence-driven assessment. More than 30 alignment meetings that would typically occur post-evaluation were resolved during the evaluation itself, substantially reducing the back-and-forth between application teams, vendors, and leadership. By centralizing requirements, test results, and vendor responses into shared decision artifacts, the firm reduced duplicated efforts across teams and shortened the time from assessment conception to executive decision.

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