

2026 CREDIT UNION LENDING AUTOMATION REPORT

Beyond the Black Box

*Why Transparent, Rules-Based Decisioning Outperforms Opaque AI for Credit Union
Consumer Lending*

DECISION ENGINE LABS

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Executive Summary

Credit unions are under mounting pressure to modernize consumer lending decisioning. Delinquencies are climbing, margins are compressing, and members expect a near-instant answer on a loan application. At the same time, credit union leaders remain genuinely wary of black-box artificial intelligence: regulatory scrutiny — not cost, not bias, not member experience — is the concern named most often when institutions evaluate AI-driven underwriting¹, a finding this report's own field research independently confirms⁶.

This report combines third-party industry and government research with direct responses from credit union lending leaders, gathered by Decision Engine Labs in August 2026, to make a straightforward case: credit unions can close most of the automation gap described in Section 1 with a fully transparent, auditable, rules-based decision engine built from their own historical loan performance data — without introducing a model no examiner, member, or underwriter can fully explain.

The findings that follow are organized in five parts: the current state of credit union lending automation; why credit unions are proving reluctant to adopt AI-driven underwriting; what credit union lending leaders told Decision Engine Labs directly; the measurable cost of slow decisioning; and how decision speed and transparent logic combine to help credit unions serve more of their membership, including thin-file and underbanked members, more effectively.

1. The State of Credit Union Consumer Lending

Credit union lending technology has not kept pace with the pressure on the balance sheet. Independent research into community banks' and credit unions' lending operations paints a consistent picture of an industry that knows it has a problem but has been slow to fund the fix.

- Just 10% of community banks and credit unions consider their approach to credit modeling “industry-leading or innovative” — 54% describe themselves as merely “managing,” and 36% as “reacting.”¹
- Nearly two-thirds (63%) say updating their credit models is “somewhat” or “very” difficult, and only 13% feel very prepared to adapt their models to changing market conditions.¹
- Model velocity is slow industry-wide: 54% of institutions need six or more weeks to build and validate a new credit model, and 39% need more than eight weeks just to deploy one.¹
- About 8 in 10 institutions generate some automated underwriting decisions, but at 40% of institutions, 20% or fewer of loans are actually auto-decided — and even after a loan is “auto-decided,” 53% of institutions still manually re-review more than a quarter of those files, including 19% that re-review nearly every one.¹
- The gap between ambition and reality is just as wide when credit unions describe their own workflows directly: only 12% say they have significantly automated lending decisioning, even though 73% say they want to. 62% point to slow decision-making and a lack of after-hours capability as the barrier holding them back.⁴

This stagnation is becoming expensive. Credit performance has been deteriorating at the same time automation has stalled:

- Credit union 60-day delinquency rates have climbed 276% since their Q3 2021 low of 0.34%, reaching 0.94% by Q4 2024 — a level that now exceeds the pre-pandemic 2017 peak of 0.76%.²
- Credit unions charged off more than \$4 billion in loans in 2024, and the charge-off rate on outstanding balances nearly tripled, from 0.37% to 1.09%, over the same window.²
- Larger credit unions, those with more than \$20 billion in assets, are seeing notably higher delinquency rates than their smaller billion-dollar-plus peers — scale alone is not solving this problem.²

Board-level attention has followed. The share of bank and credit union executives citing “cost of funds” as a top concern jumped from 8% in 2021 to 70% in 2024, and “efficiency, noninterest expenses, and costs” rose from 31% to 53% over the same period.¹ Yet investment has not caught up with the urgency: only 18% of institutions plan a significant investment or strategic partnership to modernize credit modeling and decisioning over the next three years.¹ Meanwhile, the number of federally insured credit unions itself continues to shrink — from 4,455 in Q4 2024 to 4,287 in Q4 2025³ — consolidation pressure that raises the real cost of standing still.

2. Why Credit Unions Are Saying No to Black-Box AI

As credit unions look to close the automation gap described in Section 1, much of the vendor market has pointed them toward artificial intelligence and machine learning underwriting models. Credit union leaders, however, have been consistently reluctant to follow — and the data suggests they have good reasons.

- Regulatory scrutiny is the single most-cited concern about using AI in credit modeling, named by 70% of institutions — well ahead of cost (45%), transparency (42%), internal knowledge gaps (42%), and bias (42%).¹
- Just 13% of community-based financial institutions have actually deployed AI in credit and lending, and 29% say it is not even on their roadmap.¹ Adoption, in other words, remains the exception rather than the rule — even among institutions that have automated other parts of lending.

Even the AI industry's own literature concedes the core problem. Machine learning credit models are routinely described — by their own proponents — as “black boxes”: systems complex enough that explaining a single lending decision requires applying advanced mathematical game theory, so-called “Shapley value” methods, after the fact, just to approximate why the model did what it did.⁵ That approach is not a minor technicality. It means the explanation a member receives for a denial is not the model's logic itself, but a statistical reconstruction of it — generated after the decision has already been made.

The alternative that is sometimes proposed — simpler, “interpretable” model types — comes with its own tradeoff: these models are typically less accurate, and in credit risk, lower accuracy has only two possible outcomes — more loans made to borrowers who cannot repay them, or fewer credit-worthy members getting approved.⁵ There is no version of black-box AI underwriting that avoids this tradeoff entirely; it is either explained after the fact through complex approximation, or it is simplified at the cost of accuracy.

This is precisely the tradeoff a transparent, rules-based decision engine avoids. When the underwriting logic is a set of auditable rules built directly from a credit union's own loan performance data, there is no black box to reconstruct — the rule is the explanation, in real time, for every applicant, every time.

3. Field Research: What Credit Union Lending Leaders Told Us

In August 2026, Decision Engine Labs went directly to credit union consumer-lending leaders — the people who own loan decisioning day to day — to understand where automation stands today versus where it needs to go. Respondent institutions ranged from \$1 billion to \$5 billion in total assets, spanning indirect auto, direct auto, and unsecured consumer lending.⁶

A few findings stand out.

- Every credit union that responded already performs some automated consumer loan decisioning today — between 10% and 50% of application volume — yet every one of them said that in an ideal world, they would automate 61–80% of decisions.⁶ That 30-to-50-point gap between where these credit unions are and where they want to be is the clearest single finding in our field research, and it lines up exactly with the industry-wide automation gap documented in Section 1.
- None of the respondents currently use an AI or machine learning-based decision engine.⁶ This wasn't surprising since industry research presented in Section 2 above shows that only 13% of Credit Unions have adopted AI technology. Asked why not, the answer was consistent: 67% named "AI risk aversion" directly as their primary reason, followed second by budget constraints and high perceived cost — not a lack of ambition to automate further.
- Asked specifically what concerns them about AI-driven underwriting, 67% cited regulatory scrutiny from the NCUA or CFPB and 33% named integration friction with their core system and LOS. None named cost or member experience as their top AI-specific concern, and all of them rated their concern about AI "hallucinations" — statistically invalid patterns that produce erroneous approvals or denials — as "moderate."⁶
- The compliance exposure they described was concrete, not abstract: many named the inability to safely score "thin-file" applicants as their primary data compliance vulnerability today, and one specifically called out that more than 30% of credit-worthy, thin-file applicants are currently auto-denied or simply never scored by their existing model.⁶
- All respondents already run rules-based logic inside their LOS — waterfall/boolean logic or grouped rule sets — rather than a machine-learning model. Their stated goal is to extend that same kind of transparent logic further, not to replace it with a black box.⁶
- Turnaround time for anything that is not auto-decisioned still varies widely: most reported under 2 hours for manually reviewed applications, while a small percentage of credit unions named "decisioning speed" as its single biggest lending challenge reported a 25-to-48-hour turnaround for those same manually reviewed files — a direct, self-reported illustration of the cost of slow decisioning discussed in Section 4.⁶

4. The Cost of Slow: Speed, Pull-Through, and Member Retention

Decision speed is not a soft metric. It is directly tied to whether an approved loan ever actually funds — what lenders call pull-through — and to whether a member finishes an application at all.

- Across financial services broadly, 68% of consumers abandon an online loan or financial-product application before completing it⁷, and separate research puts the failure-to-submit rate at 54%.⁷
- Wait time is the trigger, not just application length: abandonment rates exceed 50% once an application takes more than three to five minutes to move forward.⁸
- Patience is shrinking. The average consumer today abandons a stalled application after roughly 19 minutes of waiting, down from 26 minutes in 2020.⁹
- The dollars are real: one regional lender traced a 67% abandonment rate on personal loan applications to roughly \$100 million in lost annual interest income.¹⁰
- In auto lending specifically, 45% of financial institutions report that moving to digital, automated origination cut loan approval time from seven days down to 2.5 days, and lenders with heavily automated processes fund same-day far more often than lenders still relying on manual review.¹¹

Every stalled or abandoned application is also a sunk acquisition cost, not just a missed opportunity. Industry benchmarks put the cost of acquiring a funded loan customer at roughly \$500 to \$825 depending on channel¹¹ — a cost the credit union has already incurred the moment a member starts an application, whether or not that loan ever books. A credit union that cannot decide fast enough is not just risking member satisfaction; it is paying to originate loans it then fails to close.

Our own field research reflects this exact dynamic in practice: Speed is not a hypothetical benefit in this data; it is the exact gap the slowest-moving institution named as its own biggest problem.

5. Speed, Transparency, and Reaching More of the Membership

Millions of otherwise credit-worthy people simply do not fit neatly into a traditional score. An estimated 26 million American adults have no credit record at all, and another 19 million have a file too thin or too stale to score — together, close to 1 in 5 U.S. adults.¹² Separately, 4.2% of U.S. households (5.6 million) were unbanked in 2023, and another 14.2% (19.0 million) were underbanked.¹³ Consumer appetite to be evaluated on more than a single legacy score is high: 70% of Americans say they are willing to share more financial data if it leads to a fairer credit decision.¹⁴

Credit unions already carry this mission more than any other class of financial institution. 55% of all credit unions hold a Low-Income Credit Union designation, together serving 73 million members, and 9.1% are certified Community Development Financial Institutions serving roughly another 20 million members.¹⁵ A slow, rigid, one-size-fits-all decision process works against that mission every day it stays in place: every extra hour a thin-file or first-time borrower waits for an answer is another hour they may spend walking into a payday lender, a buy-here-pay-here dealer, or a fintech app instead.

This is precisely where transparent, rules-based decisioning has a real advantage over a black-box model. A credit union's own underwriters and compliance team can see, adjust, and defend every threshold, tier, and exception in the logic — including where and how to extend additional, documented consideration to members with a limited credit history — because the rule itself, not a hidden weight buried inside a model, is the explanation. Two thirds of credit unions in our field research named the inability to safely score thin-file members as their top compliance vulnerability today.⁶ A transparent rule set is something a credit union can widen deliberately, test, and defend to an examiner. A black-box score cannot be adjusted that way — by design, no one, including the vendor, can fully explain why it drew the line where it did.

6. A Different Approach: Transparent, Rules-Based Decisioning

Decision Engine Labs builds a credit union's automated underwriting logic directly from that credit union's own historical loan performance data — not a third-party model trained on someone else's portfolio, and not a machine-learning model of any kind.

- Fully auditable logic, not a black box. Every tier, cutoff, and exception in the resulting decision engine is visible and defensible to examiners, auditors, and members alike — in direct contrast to the post-hoc, approximation-based explanations a black-box AI model requires.⁵
- Built on your data, for your risk tolerance. Rule sets are engineered from a credit union's own sanitized, anonymized historical portfolio — not a generic model built for the industry as a whole.
- No new software subscription. The rule set deploys inside a credit union's existing loan origination system, with no recurring per-transaction or SaaS fee.
- Owned, not rented. A credit union pays once and owns its decision logic permanently — typically at a cost comparable to a single underwriter's annual salary — rather than renting a black-box model indefinitely.
- Fast to deploy. Production-ready rule sets are engineered and delivered in less than a week from receipt of sanitized historical data.

This is the model this report argues for throughout: not less automation, and not AI automation, but the same speed and consistency benefits described in Sections 1 and 4 — delivered through logic a credit union's own team can see, test, and stand behind.

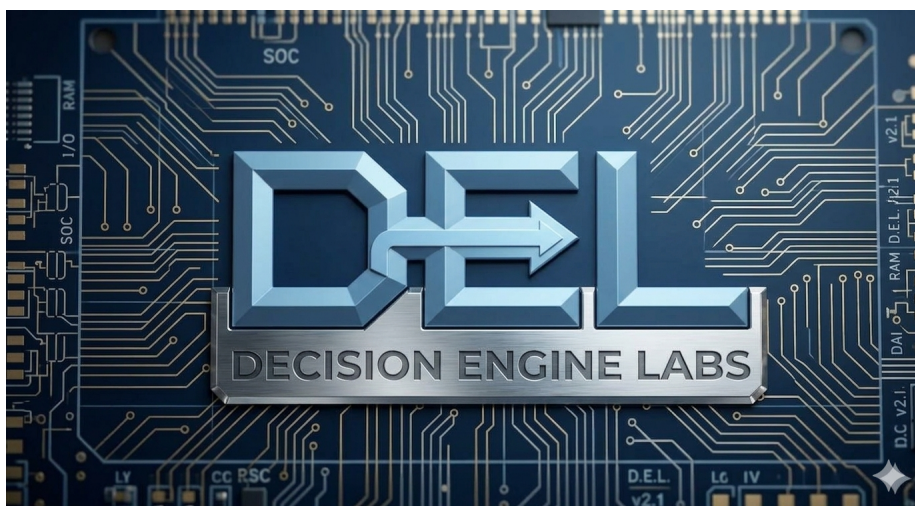
Conclusion

The data in this report points in one direction. Credit unions know their lending technology has fallen behind, and the cost of that gap is now showing up directly in delinquency and charge-off numbers, not just in member complaints about slow answers. At the same time, credit union leaders — both in the broader industry data and in our own direct field research — are not asking for AI. They are asking for speed, consistency, and a decision they can explain to a member, an examiner, and their own board without a data scientist in the room.

A transparent, rules-based decision engine, built from a credit union's own loan performance data and owned outright rather than rented indefinitely, is a direct answer to that ask — and closes most of the automation gap described in Section 1 without opening the compliance exposure described in Section 2.

To discuss what a custom, transparent decision engine could look like for your credit union's own portfolio, contact Decision Engine Labs.

www.DecisionEngineLabs.com



A Note on Methodology

The field research presented in Section 3 reflects direct responses gathered by Decision Engine Labs from credit union consumer-lending leaders in August 2026, through a direct-outreach lending automation survey. Respondent institutions ranged from \$1 billion to \$5 billion in total assets and are presented anonymously. All other statistics in this report are drawn from the third-party, government, and industry sources listed below, current as of the date noted for each.

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