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Innovation and Inclusion in AI Credit Risk Models

Enhancing the credit union member experience and access with real-time personalized lending

Executive Summary

Building upon the "people helping people" credit union philosophy, C-level decision-makers must continually rethink the member experience. Increasingly, that includes adopting smarter credit risk models that harvest alternative data sources to create new member opportunities and enable frictionless transactions.

Gone are the days of a credit union relying solely on traditional risk models such as FICO, who founded its scoring model in 1956 and focuses on payment history, amounts owed, length of credit history and credit mix. While a FICO score still has value, with time comes change. In today's marketplace, whether dealing with prime or subprime lenders, a credit union that relies on traditional credit scores alone is unwillingly experiencing a lack of precision, which leads to inconsistent credit decisions on behalf of their valued members.

Credit union members are rightly demanding the same level of service from their financial institution that they receive

from online retail and ride share services, such as Amazon and Uber. So, credit unions, in turn, must provide a next generation experience powered by artificial intelligence (AI) that can interact with members, analyze risk and make data-driven decisions in real-time.

By better aligning their risk and IT teams, credit unions can leverage tools which allow the development and deployment of modern AI-based risk models without a significant technology lift. This approach uses no-code technology to connect knowledge-based employees and advocates into the credit union's technology stack through application program interfaces (APIs). Taking a plug-and-play risk model approach reduces operational friction between risk analysts and the credit union's IT department (or one that is outsourced). As such, credit union risk analysts can seamlessly pull data from the production environment and strategically design, test and deploy real-time decision models that can be reintegrated into the technology stack without the need to code or recode.

The purpose of this white paper is to educate credit union executives on the benefits of using AI to build, validate, deploy, and monitor risk models that optimize real-time lending decisions and enhance member engagement and experience. To this end, C-level executives will better understand the impacts no-code, real-time risk decision models have on the credit union lending space, such as with credit cards, automotive loans, and home equity lines of credit (HELOC), in 2024 and beyond.

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## The Drivers: Why Adopt a Modern AI Risk Decisioning Model?

In January 2024, news spread about an unintentional credit decisioning bias by one of the industry's largest credit unions. This instance highlighted the need for every credit union, no matter its size or asset class, to re-evaluate risk models with an eye toward inclusion and fairness.

When a credit union confronts disparity across socioeconomic classes in how lending decisions are made, the answer isn't to place a thumb on the credit risk scale (e.g., affirmative action programs), but rather, the better response is to build a more inclusive scale. Antiquated decision-making models are being replaced by new model sets that address ever-changing, real-time economic and financial data points related to each individual member. Credit unions, therefore, need more flexibility in how they define their lending criteria, especially when dealing with potential new members who have shorter credit histories.

> The solution to addressing inequality in credit is to build a better scale for measuring risk.

According to the National Credit Union Administration (NCUA), as of September 2023, there were 4,645 federally insured credit unions supporting more than 138 million members. The number of credit unions with a low-income designation was 2,575, which is a critical distinction as many of these members are often unreasonably caught in the traditional credit risk scoring trap. In 2023, for example, total outstanding loans for all credit unions were $132 billion, which include residential property loans ($60.8 billion), auto loans ($29 billion) and credit card balances ($8.8 billion). If AI-driven credit risk decision models were to be deployed, credit unions could confidently lend more money to members (or potential members) once deemed unqualified by outmoded credit risk scoring models. This represents a win-win for both members and the credit union.
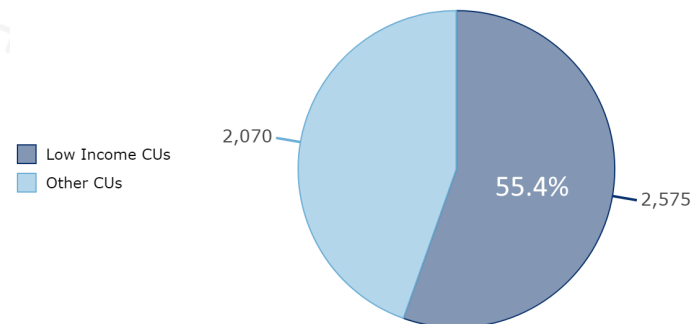
Over 55% of credit unions serve low-income members.

A recent Ernst & Young (EY) report, "How SME lenders can build next-generation credit decisioning," also found that credit unions, banks and other lenders are actively transforming Small and Medium-sized Enterprises (SMEs) lending business platforms. "[This is due] to mounting competitive pressures, including from fresh market entrants, heightened customer expectations and

advancements in data technology and analytics," the report noted.

Additionally, EY found that 48% of SMEs are interested in faster credit as a service and that "Scalable and efficient technology solutions are driving extensive digitization and automation across customer journeys, delivering enhanced support for customer interaction through AI."

Adopting modern AI risk models can be a fast and cost-effective way for credit unions to improve inclusion and streamline the member experience. Deploying model driven decision engines as real-time APIs enables risk and credit teams to add member intelligence to a credit union's existing technology stack, avoiding a major application re-development effort.

Banking data from core systems or open banking vendors can increase inclusion.

Modern risk models enable use of alternate data sources such as existing account transaction histories from the credit union's core banking system or from open banking data providers. This provides a holistic view of the member relationship and their financial situation which can improve onboarding and validating new members, originating new

products and optimizing the member servicing experience.

After deploying modern risk models, credit unions can achieve a more diverse membership base, higher performing loans, more competitive loan/credit offers and better compliance visibility.

Historic Challenges: Why classic risk models fall short

Credit unions, like all lenders, base a credit decision on the probability that the loan holder will repay the debt. Traditional credit models, however, do not accurately reflect today's member's complete financial picture. Classic model factors, such as debt-to-income ratio or the level of revolving credit utilization, are becoming less predictive of a member's ability or desire to repay their debt. There are multiple additional factors impacting the financial health of today's credit union members. Excessive student debt, delays buying cars and homes, less loyalty to financial institutions and economic impacts of the COVID-19 pandemic have made it harder to accurately assess loan applicants using traditional factors.

Changing generations make traditional financial risk indicators less reliable.

As a result, challenger banks and fintechs utilizing modern AI financial technologies

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have successfully entered the lending space. When considering the state of older credit risk models, along with present day competition, credit union executives can't afford to be followers. In order for credit unions to retain existing membership, attract more diverse members, and protect their reputation for equity, innovation is required.

> Friction between technology used by risk and IT teams has limited model innovation.

Often a barrier to innovation comes from friction between the credit union's risk teams and the technology (whether internal or outsourced) used to interact with members. Historic pain points include incompatibility between the tools risk analysts currently use, such as Excel, SAS and Python, and the transactional environments in which the credit union's production system operates. Many credit unions are running on older core, origination and servicing platforms that simply lack the flexibility to ingest new data sources or to deploy more advanced AI decision logic.

In the same manner these technologies have aged, so has the age of the average credit union member, which the NCUA noted was 47 years old in 2023. While it is imperative to continue to meet the banking expectations of this age group, credit unions must also remain hyper focused on the 18-to-34 age segment because according to the latest Census

Bureau statistics, millennials and those younger represent half of the U.S. population (335 million people). Further, recent Gallup research found that millennials, at 27%, are the least engaged banking segment compared to Gen X (34%), boomers (38%), and the Silent Generation (46%).

A 2023 Consumer Pulse Study by TransUnion also found that only 54% of consumers reported having sufficient access to credit. "The gap between credit importance and adequate access was greatest among the youngest generation. Gen Z reported credit importance at 98% — followed by 96% of millennials, 91% of Gen X and 74% of baby boomers," the report noted. "Yet only 35% of Gen Z agreed they have sufficient access to credit compared to 54% of millennials, 51% of Gen X, and 70% of baby boomers."
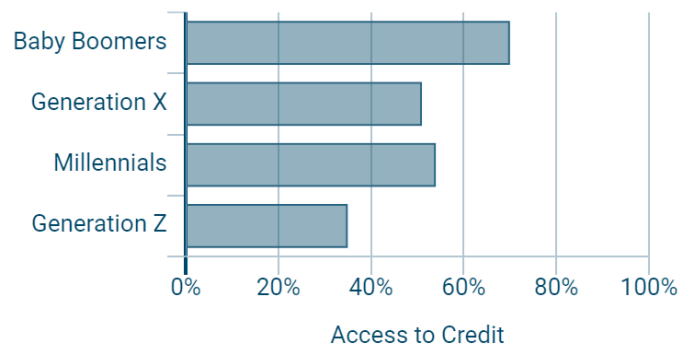
Emerging competitors understand these banking trends and, in turn, have proactively developed tools to make decisions on credit applications in a fraction of the time compared to traditional credit scoring models. Additionally, these fintech challengers are reaching a broader demographic of applicants due to offering ease-of-use

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apps and accessing alternative data for applicants with thin credit histories. As a result, many credit unions are losing the confidence of existing members and potentially losing the ability to attract the next generation.

AI risk decisioning models, however, have the potential to level the playing field. A credit union, for instance, could provide real-time credit pricing decisions while a customer is visiting a partnering website or recommend an investment portfolio in real-time as a member is accessing their profile online. This type of advanced risk decisioning model could also flag possible compliance violations in online banking or more simply approve members for car loans or mortgages allowing for interactive loan restructuring in real-time.

## The Future: AI-Driven Member Decisioning

It can be argued that some technological advancements have historically led to a more depersonalized banking experience (e.g., call center bots, ATMs). With AI driven decisioning models, however, a credit union now can better understand their members and build unique, personalized relationships using alternate data and advanced analytics. When AI models communicate in real-time and can react to new data while the member is engaged, the result is improved consistency and a better one-to-one member experience.

Partnering with a trusted and experienced third-party AI modeling platform that deploys risk decision models as pluggable APIs is the fastest way for a credit union to modernize their existing platforms. With the right technology, risk analysts, product owners, and IT can collaborate on a single-risk automation framework. It's imperative that these respected professionals, along with the selected third-party vendor, work as a team. This collaborative approach optimizes member value from the new risk models based on the credit union's unique member goals.

While there is a growing trend with credit unions to completely outsource technology initiatives, member decisioning models is one area where it is wise to retain the work in-house. Outsourcing AI risk model development can lead to lack of control, reduced member personalization and reduced

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portfolio performance. Therefore, it is important that the risk model automation technology should allow various stakeholders to work directly with new data sources, variables, business rules and advanced analytics without requiring development resources. This no code approach ensures that each team member has access to data, logic and insights without the need for the credit union to undertake protracted coding projects, which many credit unions are increasingly avoiding.

Member Facing Application

Member Performance Data

AI Risk Modeling Platform

Run-time Member Risk Models
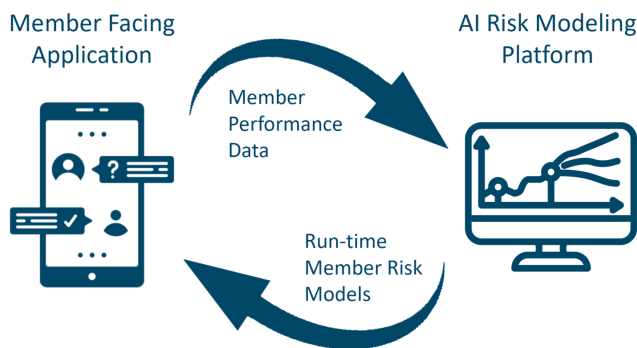
No code risk modeling accelerates innovation.

Modern AI model automation platforms provide a seamless data integration hub that will support plug-and-play connectors to a wide range of vendors as well as provide out-of-the-box logic and analytics that allow credit unions to leverage multiple alternate data sources in their decisioning without having to re-invent the wheel.

The Takeaway: How to Get Started

While credit union executives may understand the benefits of updating member risk models, they are often faced with two critical variables: cost and required staff. Utilizing modern credit scoring models, however, doesn't require a robust technology department and budget. Not every credit union, for instance, has a risk team and data scientists ready to start working with alternate data sources that could deliver a modern AI risk model. And even if they do have some of these skillsets, they often don't have the tools to aggregate this data into meaningful predictors without writing custom code. The prospect of getting a new risk model through stringent compliance hurdles can also be daunting.

While the idea of adopting a next generation AI-driven member experience could seem intimidating, the right technology partner who brings proven technology and experience can fast-track the experience. In some cases, credit unions can create a targeted decision model and deploy it into their existing member facing application in a matter of months.

Experts in deploying AI recommend starting the process by targeting specific near-term benefits, as opposed to a technology "rip and replace" approach. Modern AI tools can integrate new alternate data and analytics into existing member processes as "intelligent APIs"

that can improve personalization without redeveloping or replacing core applications. To ensure an AI model delivers the value they expect, credit unions should test, deploy and measure the performance of new models by engaging in a "proof of value" test exercise before launching a full suite of services.

> Focus on quick-hit benefits from AI risk models instead of attempting a major technology infrastructure investment.

There are costs involved with rolling out any new technology. Adoption of no-code, risk decision models, however, allows credit unions to reduce IT and compliance costs so that they can refocus investments on other areas of the member experience. By using no code to

place the responsibility of building and validating new risk models in the hands of the risk team, the credit union will reduce costly coding, testing and error correction cycles. Avoiding a coding cycle between model development and deployment also allows credit unions to better react and respond to changing market conditions and to run frequent tests all of which allows them to remain competitive.

More importantly, making more equitable credit decisions based on a member's total income, credit history, recent transaction history (e.g., utility bills) and work experience creates lending relationships not based on outdated demographics and credit scores, but rather on real-time financial performance metrics. This approach is positively impacting the lives of countless consumers across the nation and credit union members are taking notice, as should credit union decision makers.

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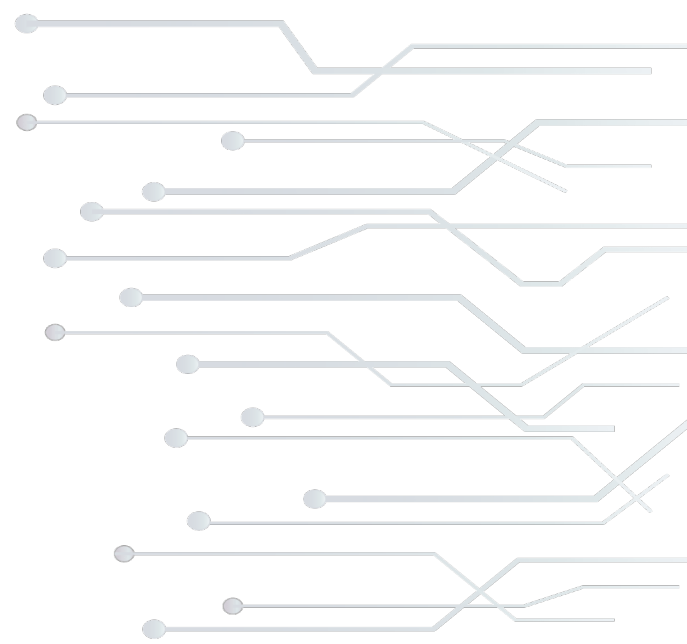
About the Author

For more than 35 years, technologist Tom Tobin has been responsible for creating analytic decision platforms for over 35 years for companies including FICO, HP, Oracle and Fiserv. Tom founded Modelshop a decade ago with a vision of democratizing access to automated risk AI engines and personalized credit offers for financial institutions, regardless of their size.

Designed for risk teams by experienced risk modelers, Modelshop's no-code, AI risk decision platform has been used by clients to design and deploy new risk models without having to rip and replace existing tech-stacks. Today, Modelshop proudly powers the risk and decision-making software for some of the world's most innovative financial institutions, credit unions, banks, and private lenders. For more information, visit: www.modelshop.com.