

From Hindsight to nSight:

Real Time Analytics for Loan Origination



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Motivation

Problem:

- Loan origination is complex and seemingly unpredictable.
- Inefficiencies lead to wasted resources and lower ROI.
- Potential for poor customer experiences.

Solution:

- Predictive analytical tools integrated directly within nCino.
- High-level dashboards for managers (**Live Intelligence**)
- Real-time, actionable intelligence for loan officers (**Embedded Intelligence**)

Data

LIVE Event Log for 280 Financial Institutions:

Complete
Loan Applications:

of Records:
14.6 Million

of Loans:
1.6 Million

Loan Total \$:
5.5 Trillion

Active
Loan Applications:

of Records:
1 Million

of Loans:
150k

Loan Total \$:
1 Trillion

Predictive Modeling

Agnostic Feature Engineering

Understanding Loan Behavior

- **Duration:** How long does a loan spend in each stage compared to the average duration for that stage?
- **Momentum:** Is the loan moving forward, or is it stuck in rework cycles?
- **Progress:** How far along is the loan in its expected lifecycle?
- **Activity:** How many "touches" or events occur within each stage?

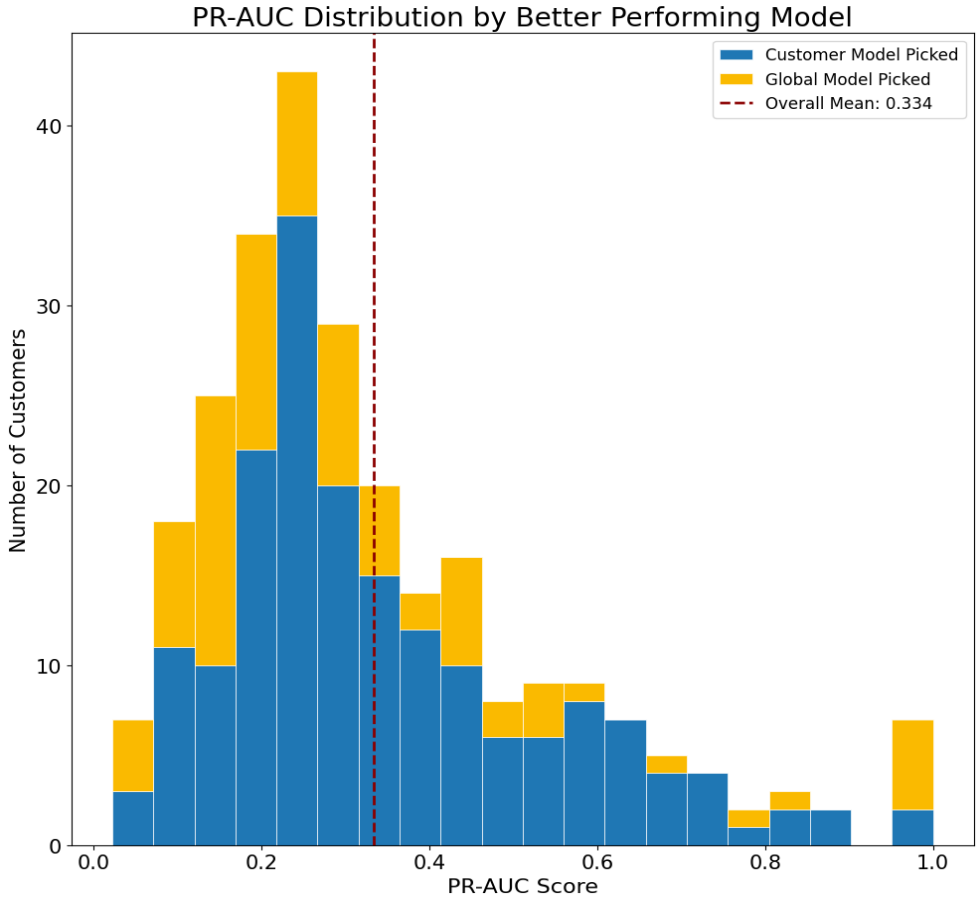
Why use agnostic features?

- **For a Global Model:** Trained on data from all customers to capture general patterns and supply predictions when little data is available.
- **For Customer-Specific Models:** Individual models trained only on the data for a single customer, capturing their unique nuances.

Why Logistic Regression?

- **SQL-based table storage:** Allows for efficient computation for updates to our active loan application dataset.

Probability of Withdraw Models



Personalized Models are better when the data available

- For **88.6%** of customers, personalized model better
- Average Customer Test ROC-AUC: **0.766**
- Average Customer Test PR-AUC: **0.316**
- Global Test ROC-AUC: **0.720**
- Global Test PR-AUC: **0.286**

Business Implications

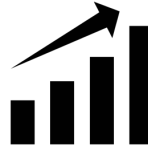
The probability of withdraw:



increases with *longer stage durations*.



decreases with *more activity* within a stage.



decreases as a loan *progresses* through the cycle



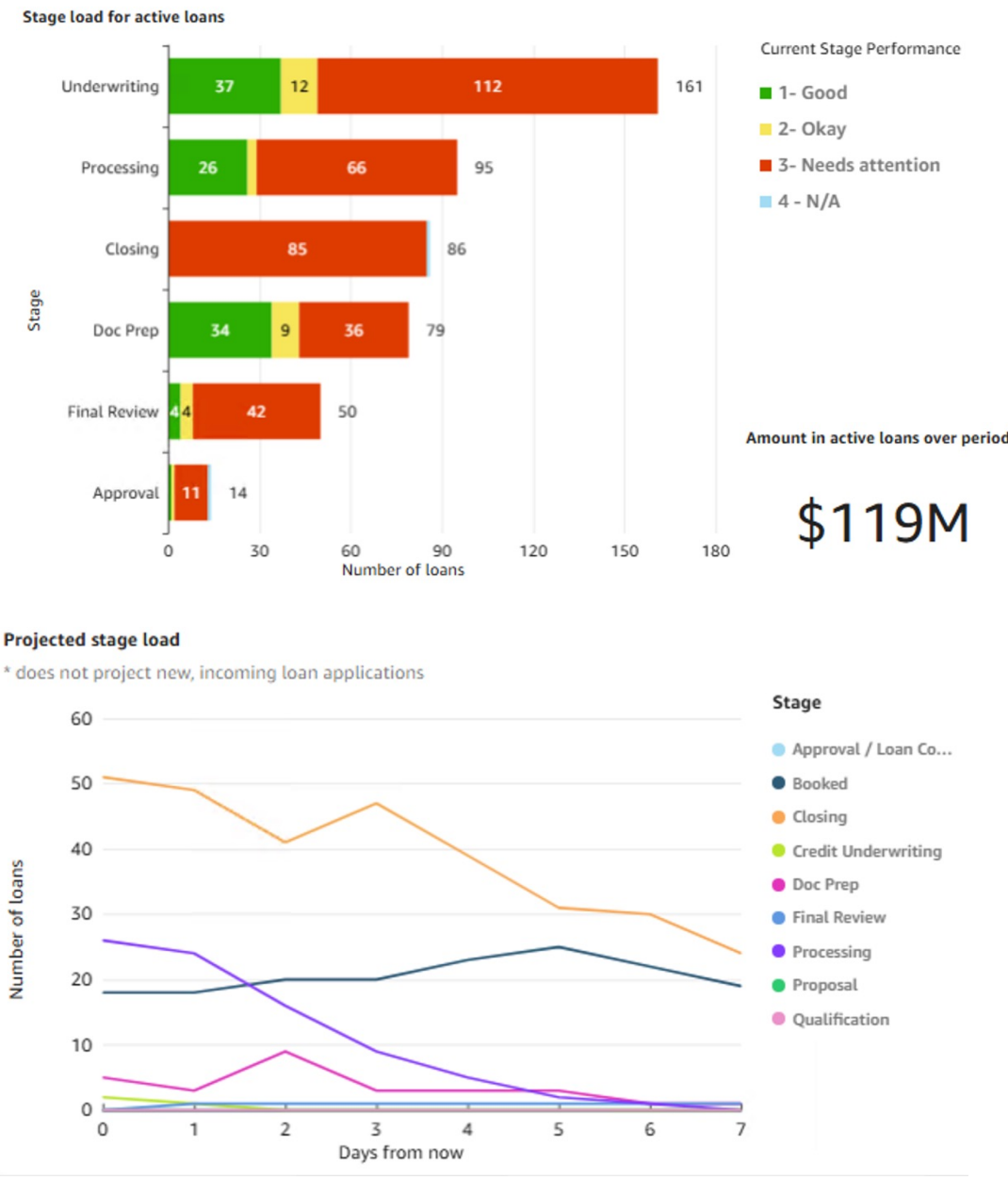
decreases as a loan gets reworked (backward momentum)

Key Takeaway:

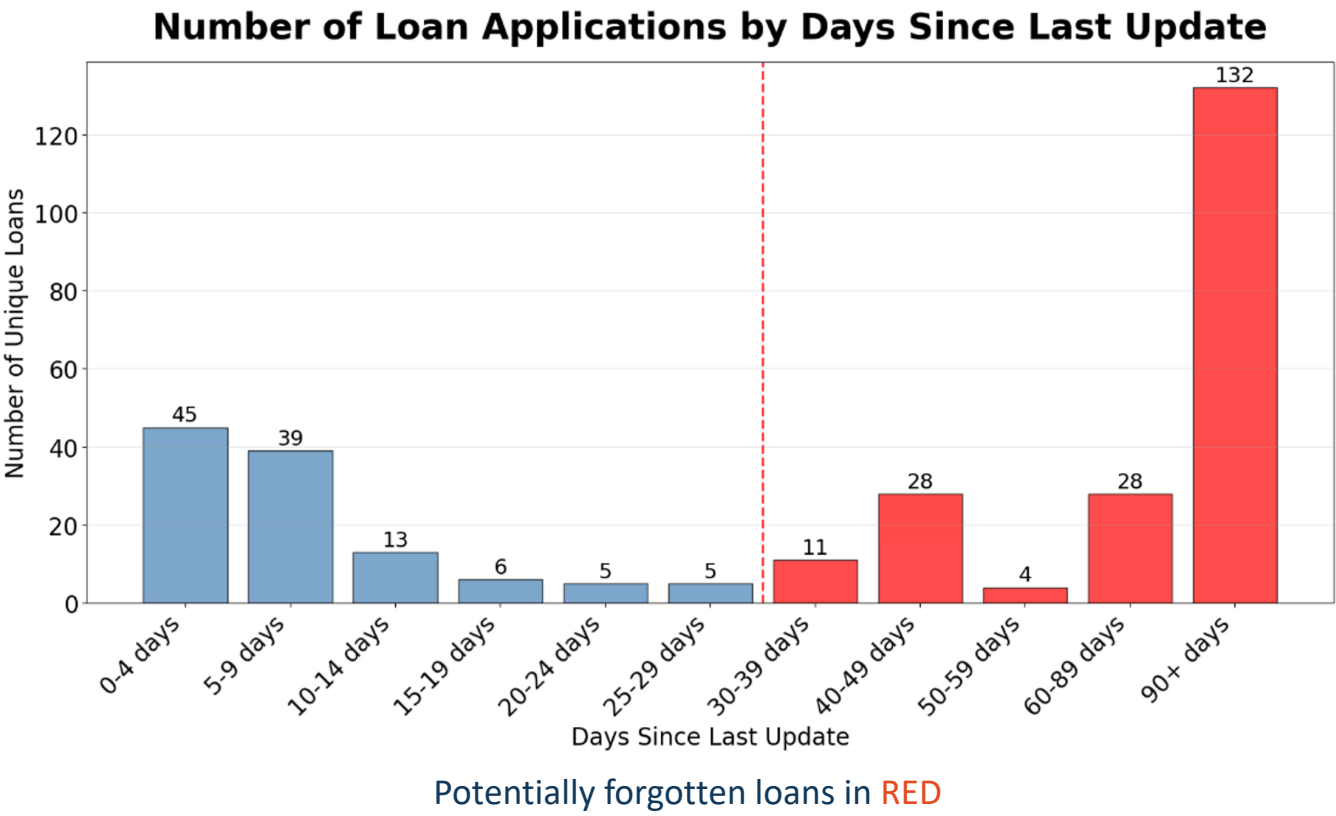
If managers and loan officers have insights into when these events occur, they may decrease the probability of withdraw and increase ROI

Live Intelligence

Stage Volumes



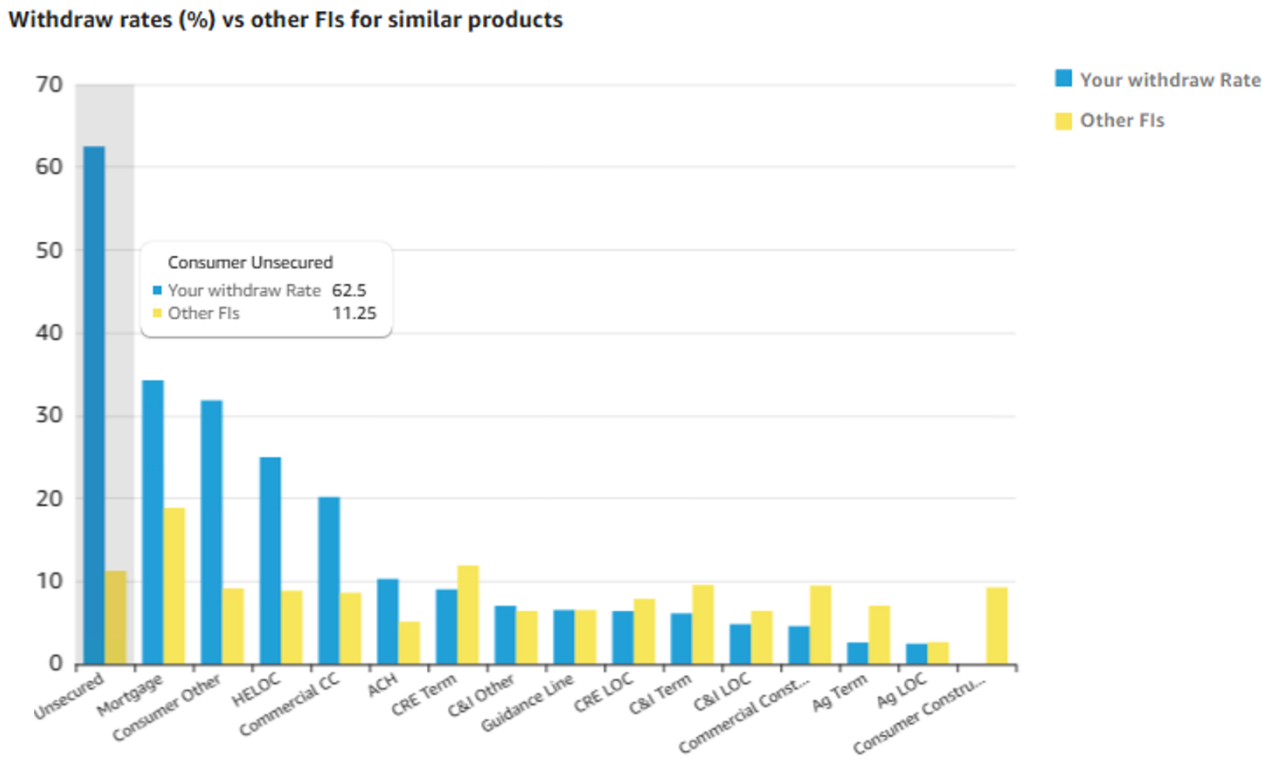
Critical Loans



Stage	Line	Type	Product	Days	Last Update
Underwriting	Business	Residential RE 1st Lien	Term Loan	15.13	Jul 17 2025, 2 PM
Underwriting	Business	Residential RE 1st Lien	Term Loan	5.02	Jul 25 2025, 4 PM
Underwriting	Business	Residential RE 1st Lien	Term Loan	13.08	Jul 29 2025, 7 PM
Underwriting	Business	Res RE Construction	Non-Revolving LOC	12.96	Jul 17 2025, 7 PM
Underwriting	Business	Res RE Construction	Non-Revolving LOC	12.96	Jul 17 2025, 6 PM
Underwriting	Business	Residential RE 1st Lien	Revolving LOC	11.98	Jul 18 2025, 7 PM
Underwriting	Business	Res RE Construction	Non-Revolving LOC	9.08	Jul 21 2025, 4 PM

Flagging "critical loans" based on historical stage durations benchmarks

Peer Benchmarking



Standard Product	Product Line	Product Type	Product
ACH	External Account	ACH Agreement	Non-Revolving LOC
Ag LOC	Agriculture	Ag Operations	Revolving LOC
Ag LOC	Agriculture	Ag Real Estate	Non-Revolving LOC
Ag LOC	Agriculture	Ag Real Estate	Revolving LOC
Ag LOC	Agriculture	Ag Unsecured	Non-Revolving LOC
Ag LOC	Agriculture	Ag Unsecured	Revolving LOC

Benchmarking withdraw rates allows customers to understand how they compare to their peers for similar products

Key Takeaway:

*Which stages need more staff to move applications?
Which stages need increased efficiency?*

Key Takeaway:

*Which loan applications do I need to prioritize?
Which loan applications need to a hold status?*

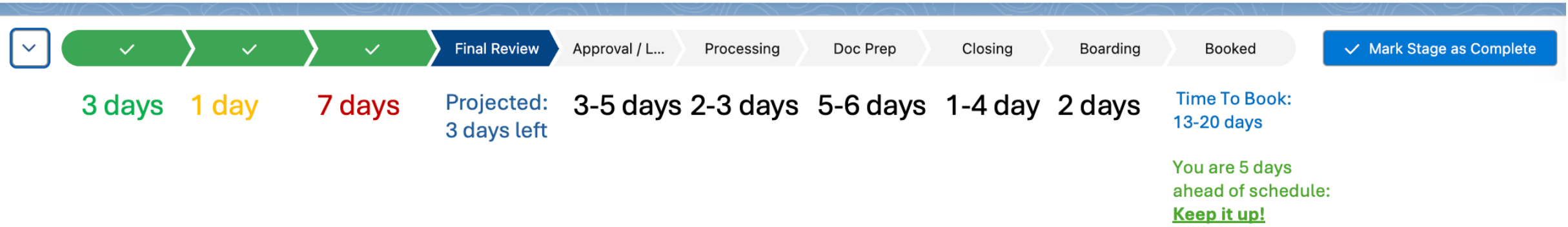
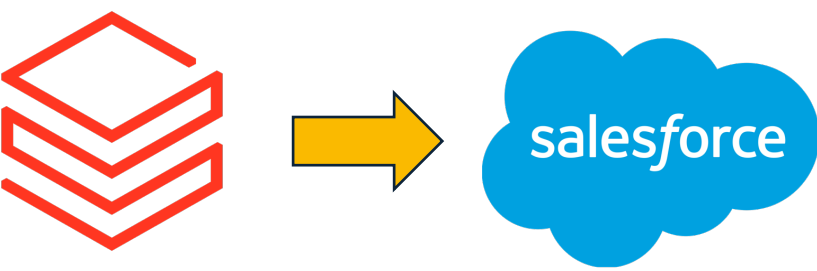
Key Takeaway:

How am I performing relative to my peers?

Embedded Intelligence

Below is the loan origination path within Salesforce.

This is an opportunity to embed our projected stage time and performance metrics within the loan officers' view, for better customer management and data-driven timelines.



"If you can help me find small fires burning in my process before they turn into bonfires... then you've had a massive impact on my bank"

CEO of nCino customer

Impacts

\$450 Million

In recaptured annual interest income

30,000 hours

Saved through live operational insights

\$1 Million

In new revenue with a 10% lift in analytics value

5% improvement

in customer satisfaction with data-driven timelines