Taking Fraud Prevention & Applied Technology to the Next Level[1]

In 2018, the National Automotive Finance Association (NAF Association) put the topic of fraud and preventing fraud at the forefront of our agenda. Our goal was to expose the magnitude of the issue, educate our members on the various types of fraud, and articulate the financial impacts associated with them. During the same period, many advanced applied technologies really broke through and made their way into solutions available to lenders. Given that many of the fraud solutions are built upon neural networks, machine learning, and artificial intelligence (AI), these topics go well together. On this topic too, we at the NAF Association endeavored to understand these new technologies, and educate our members on the application within our members' operations.

For 2019, the topics of fraud prevention and the application of new technology remain at the forefront of our agenda. This year we will continue down the path to reveal the bottom-line benefits of applying these tools and technologies, with the focus on measurable results. So, keep your eyes open for our conference agenda for the Non-Prime Auto Financing Conference, slated for June 5-9, 2019, to be held in Plano, TX.

Trends in Non-Prime Auto Industry for 2019

Identifying the current trends, and points of pain for the industry is a good place to start, so let's dive in on these categories. These macro-trends are those that we will be exploring further this year – with a strong focus on the bottom-line.

Further Fin tech Penetration
For the most part, banks have already embraced Fin tech as a way to retain and delight customers and deliver key services in a way that eliminates the need for human-to-human contact. And they have been able to engage these services without having to overhaul their entire (often legacy) infrastructure. By all indications, Credit Unions are lining up to get some in 2019. For finance companies there are very compelling reasons to utilize outsourced Fin tech as a way to improve service, control cost, and improve risk / compliance. And, much of the market has yet to fully embrace Fin tech. When they do, they will find efficiencies from digitization, improve the customer experience, remove friction, and screen out fraud at the point of application. On the servicing side, web and mobile tools to improve customer stickiness, contact, and self-curing is always welcome.

There are also some indirect benefits to deploying Fin tech:

- A recent study conducted by UC Berkeley found that Fin Tech lenders "do not discriminate in application rejections", whereas the traditional face-to-face lending format acts in a "negative welfare manner toward minorities in application accepts / rejects". The full research paper can be found here: http://faculty.haas.berkeley.edu/morse/research/papers/discrim.pdf
- Many fintechs have taken the concept of the educated consumer and wrapped their service offering around that idea. Many offer online training, education, and teaches consumers on their options, and even how to budget for their new purchase. The net result is more

[1] Reprinted from January / February 2019 – Non Prime Times Magazine

transparency into the process, and hopefully at the end of the day more financial inclusion and improved loan performance.

Increased Automation

The beauty of automating any critical decision is that you stabilize your process, and minimize risks and variation introduced by humans. Automation should be a critical pre-requisite to pushing down the pedal on expansion and growth. Whether 2019 will be a year of growth for non-prime auto could have a real dependency on the penetration of credit and fraud models on the front-end, and consumer (behavioral) and asset (vehicle recovery / future valuation) models on the back-end. These models tend to build confidence with companies and investors since good ones remove variation in your forecasted results once deployed.

Eliminating variation introduced by non-scientific factors (judgmental underwriting) formalizes credit policies, which results in tighter process results (delinquencies, and losses for example) and improves compliance (elimination of the possibility of a human actor hi-jacking your process).

On the fraud side, applying models based on applied tech such as neural networks / artificial intelligence have proven themselves to be helpful at making sense of vaguely understood relationships between variables, large data sets, and in finding patterns. This backbone exists in various forms within most of the market solutions we reviewed in our fraud articles last year.

Finally, there is still a lot to be done in the automation and delivery of standard and analytical reports. Getting down and dirty with the data in order to build an initial report is a great way to learn the business rules and how to best use your data. I started my career in data warehousing, reporting and analytics and I recall how costly it was to build marts, establish data loads, and beg for time from database administrators. Seeing what we can do now with a fraction of the time, effort, and cost is truly astonishing. The tools are really there for any company to have a well-functioning data strategy and infrastructure that can be used by the entire organization.

Applied Technology

The impact of applied technologies in our daily lives is great, and there is no turning back. Every day I am amazed by another cool thing that I can do on my phone, or on Amazon.com that truly makes my life easier and allows me to be more efficient at work and enjoy more time with my family having fun versus running errands or planning. The same holds true for applied technology's adoption into non-prime auto.

In the March/April edition of Non-Prime Times I broke down *artificial intelligence*, *machine learning*, and *neural networks* into definitions and examples of uses. To summarize and quote, "artificial intelligence can be defined as 'machines that mimic the brain to learn vs. being told how to do something', and Machine Learning is the 'science of algorithms that learn from data'. Neural Networks are systems that aim to mimic the operations of neurons in the human brain."

Taken in concert, these solutions are really good at finding patterns in data and forming them into something that makes sense. A basic and really powerful application of these mechanisms is in

monitoring for anything that seems out of place – just like a human, only not prone to missing the minor details. Find something that seems out of place and flag it for someone human to review it.

The next level up is when you can apply human intelligence to models that can do more than simply identify things that seem out of place, rather that can process data and information the same way a human would, and come up with a decision (yes / no), a score, or interest rate, for example. Also in this area are models that forecast the likelihood and timing that a borrower is going to default, or look at historical patterns of payments and identify the best time to call, or perhaps prove that email is better for communicating with a certain borrower. These models that are deployed on your current portfolio help to manage Operating Expense within operations, which is one of the largest (if not THE largest) areas of expense.

Finally, a few words on the blockchain. It is really hard to completely capture the myriad of use cases that blockchains can offer to our industry. Still, I will call out a few of the major ones that I think are most relevant to non-prime auto applications:

1) *Identity tokens* – by tokenizing personal information, consumers can more instantly and comprehensively identify themselves and satisfy "Know Your Customer" (KYC) requirements. The ability to verify and individual is more than just an ID, so there could also be information that is securely stored about your banking history, assets, and anything else that would result in a loan stipulation. Identity tokens already exist and are in use by some European countries for passport-type applications.
2) *Improved Asset Titling & Management* – titles can easily be recorded and stored on the blockchain, eliminating lost titles, improving custody, and eliminating title fraud.
3) *Smart Contracts* – blockchain-enabled, smart contracts hold both parties accountable for contract terms, and provide proof of something taking place or not, such as a payment, a repair appointment (and specifically what repairs were performed).
4) *Borrower Performance* – take a smart contract along with an IOT / blockchain enabled vehicle, and you could allow a rental car customer to access the vehicle via their mobile phone and render the vehicle inoperable when the contract is done.

As a final note on the topic of the blockchain, there is even a nonprofit organization that has been formed to forward the adoption of blockchain tech called the Mobility Open Blockchain Initiative (MOBI), and partners in this global consortium include Ford, GM, BMW, and many other familiar names.

Bottom-Lining It

As the Non-Prime Auto Financing Conference draws near, we will be identifying interesting content, speaker faculty, and looking to engage our members for input and feedback on how applied technology by way of Fin Tech, Statistical Models, and Raw Applied Technologies such as AI or the blockchain have positively impacted their businesses. Below in Figure 1, I propose a framework of categories where these various technologies can help any non-prime auto lender. I invite input and feedback on this and look to work with our members to identify and promote solutions that have resulted in measurable results.

	Reduce Losses	Speed Up Processing	Improve Forecasting	Grow Revenue	Lower Expenses	Attract Customers	Make Better Decisions	Improve Compliance / Reduce Risk
Fintech								
Mobile Engagement (Application)	x	x		x	x	x		x
Mobile Engagement (Servicing)	x	x			x	x		x
Models								
Credit Risk Modeling / Scoring	x	x	x	x	x		x	x
Income Modeling / Scoring	x	x			x		x	x
Employment Model / Bank Data	x	x	x	x	x	x	x	x
Synthetic ID / KYC Automation	x	x			x		x	x
Behavioral Modeling	x	x	x		x		x	
Raw Applied Technology								
Artificial Intelligence	x	x					x	x
Neural Networks	x	x	x	x	x	x	x	x
Blockchain	x	x			x		x	x

Figure 1. Benefits Framework – Applied Technology in Non-Prime Auto

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