

# AI Strategies in Financial Services

**Executive Brief**



## Executive Summary

The financial services industry is undergoing an AI transformation that is reshaping the sector. Early adopters of AI are reaping the benefits and adding to their bottom line results, and everyone is taking notice. These firms are using AI for a number of scenarios including personalized customer services, risk management, fraud detection, anti-money laundering and data monetization. H2O.ai, the open source leader in AI, is empowering leading financial services companies to deliver AI solutions that are changing the industry.

## AI Transformation in Financial Services

AI can bring about transformative benefits to financial services industry in the following ways.

**Improve Customer Experiences** – Consumers have come to expect personalized experiences in all facets of life. AI can be used in financial services to segment customers and drive personalized offers that increase conversion and retention in retail banking. Automated agents can help customers answer questions and solve issues on their own without talking to a person, a key to attracting and engaging millennials. Automatically alerting customers to fraudulent activity and taking action can increase customer satisfaction and reduce the likelihood of churn.

**Drive Accurate Decisions** – Speed is often discussed as a critical advantage of AI driven automation in areas like equities trading, however, for most financial services companies, the accuracy of decisions can be more important. For example, quickly determining fraudulent transaction on a credit card is important, but inaccuracy in this process can lead to locked or replaced cards for valuable clients, a key customer satisfaction issue and resulting in increased churn risk.

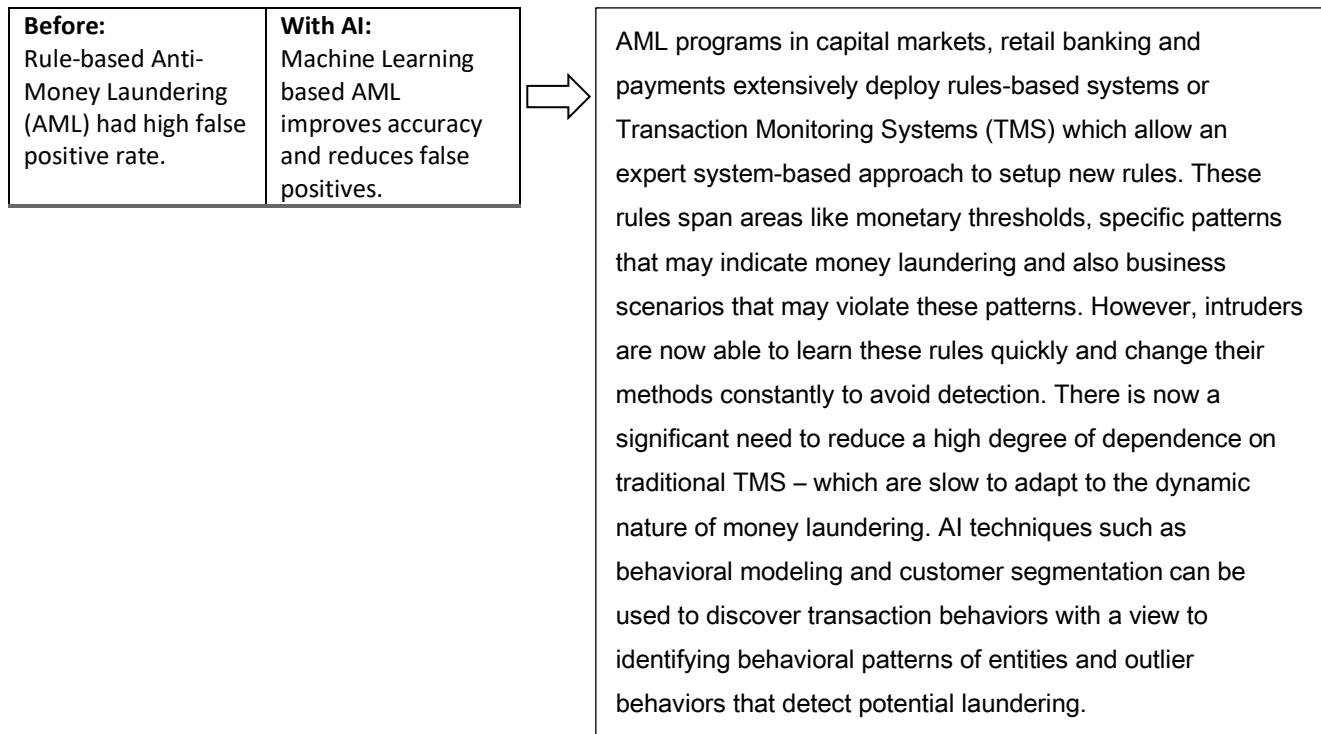
**Increase Employee Productivity** – Automation of tasks is a significant benefit of AI. By removing manual or repetitive tasks, employees can spend time in areas where they can generate more value for clients and the business. AI applications have already proven to be helpful in retail banking in onboarding new customers with automated credit scoring and income verification, delivering recommendations during sales and service, and guiding customers through routine customer service processes, like claims and dispute resolution.

**Ease Regulatory Compliance** – The rapidly changing regulatory landscape can be very challenging for financial institutions. AI can help companies comply with applicable laws in areas like anti-money laundering, customer data privacy, and asset management. AI systems are superior in many of these areas because they eliminate human error and can detect illegal activity that would be impossible for people to recognize.

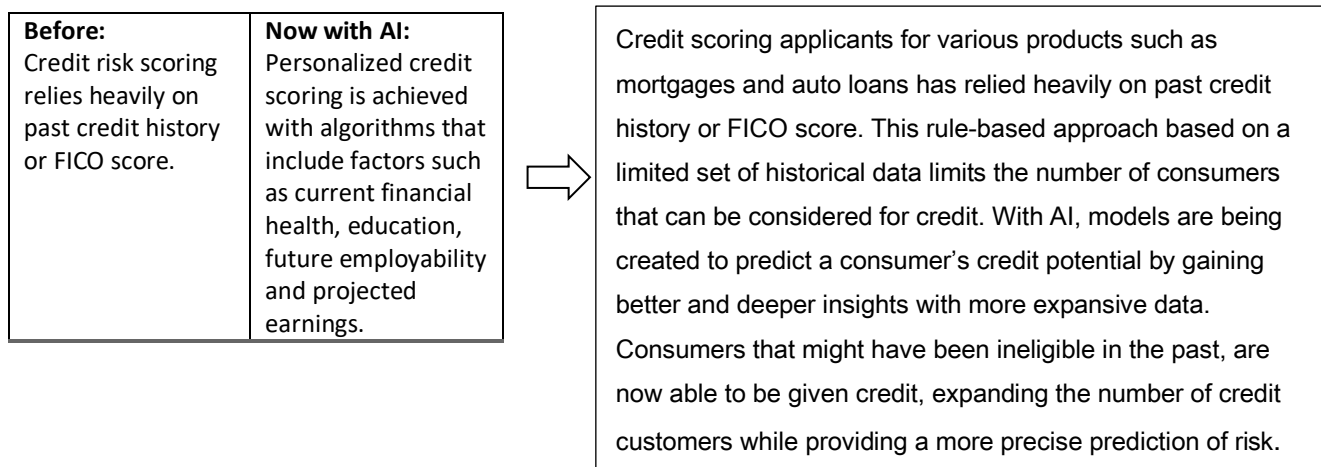
## AI in Financial Services Today

AI is expanding the opportunity and decreasing risk in financial services today. Financial institutions are increasingly using AI in a range of applications including assessing credit quality and risk, pricing and marketing contracts, automating client interactions, capital optimization, testing investment models, analyzing large position trade effects and for trade execution optimization. The list of financial services use cases continues to grow, and every major firm is driving an AI strategy. Below is a sampling of how AI is being used today.

### Anti-Money Laundering (AML)



### Credit Risk Scoring



## Fraud Detection

<b>Prior:</b> Fraud detection mechanisms adapt poorly to ever-changing fraud patterns.	<b>Now with AI:</b> Fraudulent behavior is detected faster and in near real-time, and with better accuracy due to algorithms detecting outliers and pattern behavior.
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Alternative payment modes such as mobile wallets and in-app payments are driving increased payment volumes across both open loop and closed loop payments. The convenience of online payments confers anonymity which increases the risk of fraud at a scale that continues to grow. Fraud detection is now an AI domain, and algorithms spanning classical machine learning to neural networks are being leveraged to fight fraud.

## Consumer Experience

<b>Before:</b> Consumer experiences were essentially same. The same products and services were offered to everyone.	<b>Now with AI:</b> Product recommendations are personalized and in real-time. Consumers also receive a virtual help desk experience based on their unique needs.
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Consumer banking generates petabytes of data every year and consumers want an experience specifically tailored to their needs. AI can make sense of the massive and constantly growing amounts of financial data to drive experiences. Forward looking banks strive to serve their clients when and where they need. For example, AI powered Chatbots are being used for everything from daily banking to lending decisions, providing a 24/7 virtual experience for customers that cannot get to a branch. AI also provides insight into customer behavior and need. By getting to know existing customers from a 360-degree perspective, banks can anticipate what financial products they might need or want and proactively offer it to them, customized specifically for their situation. Data driven marketing enables banks to target the right customers with precision focus.

## Data Monetization

<b>Before:</b> Firms accumulate and store large data assets.	<b>Now with AI:</b> Firms are creating strategies and business models to tap into new revenue streams by harnessing data.
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Firms have begun to recognize the importance of harnessing their substantial data assets which have been built over decades. PWC estimates that the incremental revenue from monetizing data could potentially be as high as US\$ 300 billion every year beginning 2019. This is across all the important segments of financial services - capital markets, commercial banking, consumer finance & banking, and insurance. Firms are now looking to benefit from this massive data opportunity. AI approaches are the true differentiators and the key ingredients in any data monetization strategy.

## Customer Case Study



PayPal is a global company operating a worldwide online payments system. The company's innovative open digital platform gives its 218 million active account holders in 202 markets across 25 currencies the confidence to connect and transact online.

Fraud prevention is an important area of investment for PayPal. The company has successfully used machine learning and deployed robust fraud prevention models for more than 10 years. However, fraudsters are constantly changing their patterns and uncovering new ways to take advantage of the system. As a result, PayPal must continuously find ways to improve fraud detection accuracy and decrease fraud detection the time.

Using H2O Driverless AI, the PayPal team was able to find significant new modelling features which dramatically increased model accuracy by almost 6% in a single test. For a team with over 10 years of feature engineering experience on the fraud problem, this was an amazing result. PayPal plans to continue to use Driverless AI in innovative ways to prevent fraudulent activities.

## Challenges of Implementing an AI Strategy

The adoption of AI is not without its challenges. First, there is a known shortage of AI talent. An expert data scientist is by far the most difficult and expensive position to fill. There are growing number of novice data scientists, but the lack the skills to create accurate models for mission critical applications. The second challenge is trust in AI. For a business to run on AI, key stakeholders must be able to understand how and why AI models make their decisions. This is critically important in financial services where regulations require transparency into decision making processes and that reasons for credit decisions must be provided to customers.

## Why H2O.ai for Financial Services

H2O.ai offers the market leading machine learning and data science platform and is a leader in the 2018 Gartner Data Science and Machine Learning Magic Quadrant. H2O, open source, is already being used by hundreds of thousands of data scientists and is deployed at over 14,000 organizations across nearly every industry. H2O is already used to create and deploy production AI models at 8 of the top 10 financial services firms.

H2O Driverless AI is an automatic machine learning platform that acts as a "data scientist in a box" to create AI driven products and services to transform your business. With H2O Driverless AI data science teams can dramatically increase productivity by running many more projects, enabling novice data scientists and completing production ready models in days instead of months. H2O Driverless AI also includes key capabilities that are required for financial services clients including built in model interpretability and reason codes to ensure regulatory compliance.

## Get Started Today

AI is critical to success in the financial services industry. H2O.ai, the open leader in AI, empowers financial services companies to improve customer experiences, drive more accurate decisions, increase productivity and comply with regulation to position their businesses for success. Contact H2O.ai for more details and to schedule a meeting and/or demo at: [sales@h2o.ai](mailto:sales@h2o.ai)

### About H2O.ai

H2O.ai is the open source leader in AI. Its mission is to democratize AI for everyone. H2O.ai is transforming the use of AI with software with its category-creating visionary open source machine learning platform, H2O. More than 14,000 companies use open-source H2O in mission-critical use cases for Finance, Insurance, Healthcare, Retail, Telco, Sales, and Marketing. H2O Driverless AI, "Data Scientist in a Box", provides an easier, faster and effective means of implementing data science. In February 2018, Gartner named H2O.ai, as a Leader in the 2018 Magic Quadrant for Data Science and Machine Learning Platforms. H2O.ai partners with leading technology companies such as NVIDIA, IBM, AWS, Azure and Google and is proud of its growing customer base which includes Capital One, Progressive Insurance, Comcast, Walgreens and Kaiser Permanente. For more information and to learn more about how H2O.ai is transforming business with AI, visit: [www.h2o.ai](http://www.h2o.ai)