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eBOOK

Unlocking the Potential of AI in Treasury Management

A Kyriba Quick Reference Guide

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Contents

Introduction

Artificial intelligence and machine learning (AI/ML) have gradually worked their way into everyday life in treasury and finance, but we've only scratched the surface of their potential. This eBook explores the use cases for AI/ML within treasury and finance, as well as the barriers preventing mass adoption of the technology.

AI/ML Today

It's important to understand that AI and ML are not technically the same thing. While the terms are often used interchangeably, they are two distinct technologies. AI is a broader term denoting intelligent machines that can simulate human thinking capability and behavior. ML, in contrast, is an application or subset of AI that enables machines to learn from data without additional programming.[1]

Data scientists train AI models on historical data. Next, they run new data through the trained AI model to make much more informed predictions. Such models are incredibly useful for treasury and finance, which have had to make rapid adjustments in recent years to keep organizations running.

What makes AI so powerful now, as opposed to just a few years ago? The simple answer is data. We have so much more now than ever before. Both companies and consumers are using a host of applications that generate mass amounts of data, and with the right systems in place, that data can be transformed for better decision-making.

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Applying AI/ML to Finance & Treasury

With applications proliferating across so many areas, as well as the connectivity that banks and technology providers are building through APIs, treasury and finance departments have more data at their fingertips than ever before. But processing all of that data manually is nearly impossible. That's where AI comes in.

Technology providers train AI models on data that is extracted from operational applications and placed in a central repository. These can vary and have different advantages. Data warehouses store data in hierarchal dimensions and tables. Data lakes, in contrast, store massive amounts of raw data, storing it in flat architectures to allow users more freedom for data management.[2]

Unlike robotic process automation, which can only replicate processes, AI models can analyze data and identify trends and patterns in a fraction of the time that humans can.[3] This allows for much faster and complete conversion of raw data into meaningful information that treasury and finance departments can use. AI models can be used for

various treasury functions such as cash forecasting, payments fraud detection and working capital optimization.

AI models can be used for various treasury functions such as cash forecasting, payments fraud detection, and working capital optimization. For example, AI can drastically improve receivables management. As noted in a recent AFP Treasury in Practice Guide, a technology company's accounts receivable (AR) team was struggling to manually process over 2,500 monthly checks, leading to major delays. Realizing that it needed to make a change, the AR team worked with its banking partners to implement an machine learning-enabled receivables solution. The solution automated the manual gathering, consolidation and formatting process that the AR team had been doing every morning, allowing most payments to process within two days. Furthermore, over time, the machine continues to learn from exceptions, improving accuracy. It has also provided the AR team with more opportunities to increase electronic payments adoption.

How Does Machine Learning Work?

Step 1: Learn — Historical Data + AI Model = Trained AI Model
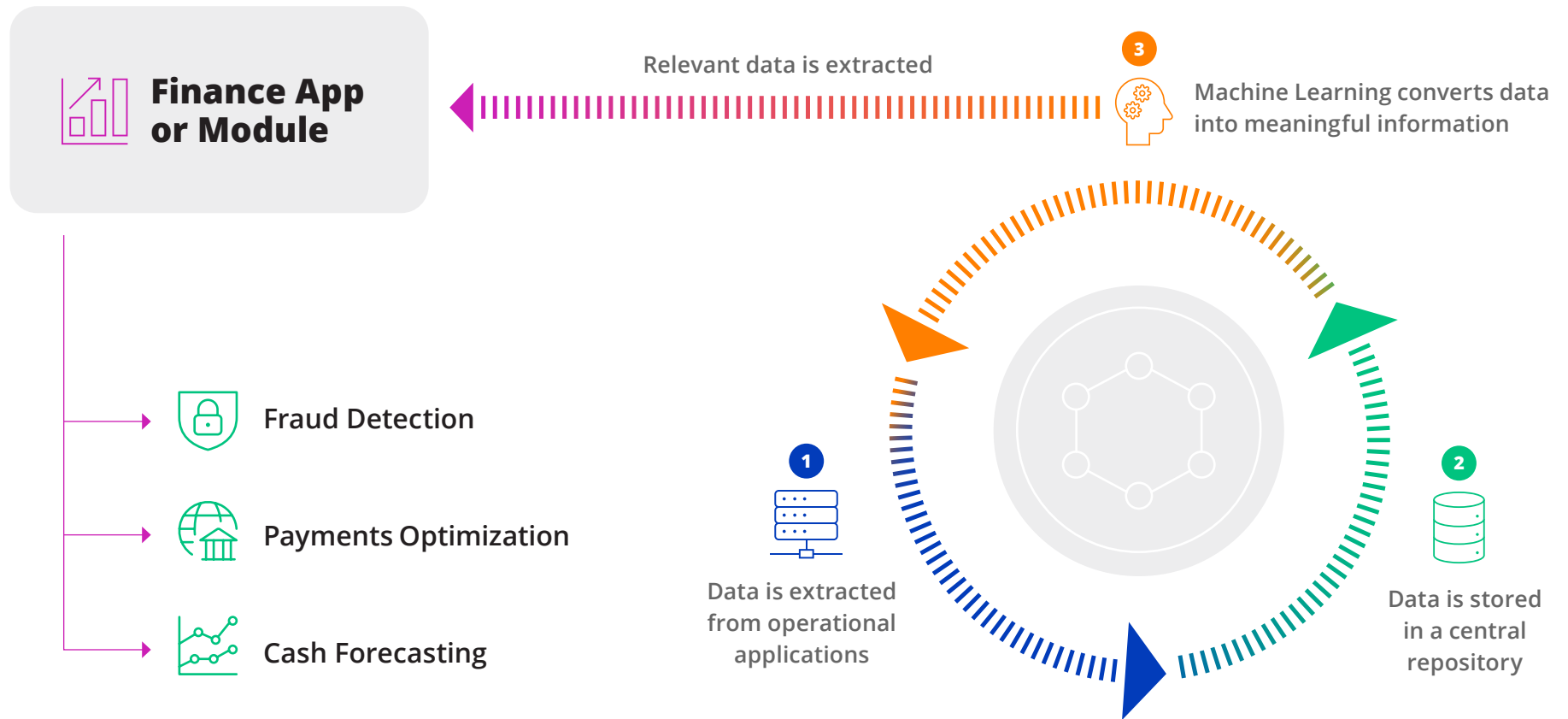
Step 2: Predict — New Data + Trained AI Model = Prediction

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How Machine Learning Works for Treasury

Finance App or Module

- Fraud Detection
- Payments Optimization
- Cash Forecasting

Relevant data is extracted

3 Machine Learning converts data into meaningful information

1 Data is extracted from operational applications

2 Data is stored in a central repository

Payments Fraud Detection

Modern payments fraud detection software uses AI to screen payments against historical payment data pulled from a data source. All the characteristics of payments—the payment amounts, payment types, the number of payments, where they're going, etc.—reside within that data source. A machine then analyzes that data, which enables it to identify anomalies in future activity.

A number of different models can be used to pinpoint those anomalies. One of the most effective is an isolation forest methodology. This model compares all the different variables in the data source against new payments to determine the normality of those payments. Any payment that has an unusually high abnormality rank is flagged and set aside for further review.

ML solutions can even show users that variable comparison, providing them with insights into how that normality/abnormality rank is calculated. Users can even set their own levels for abnormality tolerance. Companies that work in industries that are high targets for fraudulent activity might want a very low abnormality tolerance, whereas organizations that are less at risk might want to set it much higher so that minor anomalies won't disrupt payment activity. Additionally, workflows can be embedded to swiftly resolve anomalies.

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Real-Time Screening, Alerts and Notifications

The rise of same-day and real-time payment systems has increased the need for real-time responses to fraud attempts. Modern fraud detection software uses AI/ML to screen payments against historical payment data, pinpointing any anomalies. By providing more complete data, these solutions enable data-driven decision-making. Solutions can flag any abnormal payments, providing insights into the variables that determine payment normality.

Generative Adversarial Networks

The lack of data around fraud can be a problem for AI models. Training AI models can thus be challenging because the algorithms often can only learn from good payments and, at best, a handful of bad ones. Generative adversarial networks (GANs) can solve this problem. GANs are deep learning models that pit two separate neural networks against each other. One network mixes real data and synthetic data together and attempts to outwit the opposing network. By training fraud detection models on these competing networks, fraudulent transactions can be more easily identified in real data.

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Cash Forecasting

Manual processes persist in treasury, even with the advent and evolution of technologies like AI. Many treasury departments continue to rely on Excel, even though it can produce highly inaccurate cash flow forecasts that can negatively impact the business.

Organizations can increase the accuracy of their short-term cash forecasts with AI/ML-based tools that learn from the history of cash flows and continuously improve inflow projections over time. With deeper analysis of this data, organizations can better predict cash flows by season or region, which in turn reduces efforts for key functions like accounts payable by, anticipating free cash flow closing, and adjusting the payment campaign budget.

AI/ML users also can select what companies, currencies and cash flow types to include, as well as adjust the forecasting period to align on short-term payment/funding/investment decisions. With interest rates increasing, treasury teams can optimize liquidity by reducing their maximum idle cash while also minimizing the risk and cost of overdraft. Treasury will be able to determine how much of its budget it can allocate towards certain expenditures over a period of time, or whether it will need to borrow funds to make certain payments.

AI tools can factor in multiple variables and errors found in historical data to better estimate cash inflows and outflows over the next seven days. This allows treasury to determine how much of its budget it can allocate towards certain expenditures over that time period, or whether it will need to borrow funds to make certain payments. Soon, as these tools accumulate more data, they will be able to make predictions on mid- and long-term horizons.

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ChatGPT and Generative AI

ChatGPT has become a popular generative AI app, in part because of a $10 billion partnership with Microsoft. ChatGPT is well known for its natural language processing chatbot abilities that answer any question. Yet the real opportunity for ChatGPT and generative AI is to change the way we interact with online software applications, including online search and business applications like ERP and treasury management systems (TMS).

ChatGPT can also be used within a TMS where the user gives instructions to the system using keywords or questions. With a user experience (UX) that has been optimized for natural language processing, the TMS can respond to basic queries such as "What is my exposure to the Yen?" or more complex requests, including "What caused the variance in my forecast last week?".

Treasury may also find this technology to be useful in documenting treasury processes and procedures. Documentation and how-to manuals take time and effort to compile. Fortunately, ChatGPT and similar generative AI models can do all the writing for you after being fed a minimum amount of information.

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Take Action

The demands of today, and tomorrow, dictate that CFOs and treasurers must act. While pervasive economic hardships and rising global inflation may make it difficult for companies to justify spending on new technology, they are facing massive challenges if they don't adjust to the pace of the modern business world. Rest assured; if your peers aren't investing in this technology yet, they will be soon. And many companies have stockpiled their cash reserves throughout the pandemic—now is the time to begin spending some of that cash.

Treasury teams would be wise to look for a trusted partner as they explore AI/ML-based offerings. There are technology providers with teams of data experts and portfolios of treasury apps available. Many tools are already in production and require minimal effort on the part of the company.

As we emerge from the pandemic—a time when companies were focused primarily on survival—the focus now needs to be on growth. As more data becomes available, growth will come from those organizations that are able to harness that data and turn it into useful applications. Others will drown in it and fall behind. With AI/ML, treasury teams can ensure that they are positioning their organizations for success.

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READ THE FACTSHEET

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Related Resources

[1] Javapoint: Difference Between Artificial Intelligence and Machine Learning

[2] TechTarget: Data Lake

[3] AFP: Identifying Value for Treasury: Automation, Machine Learning & Artificial Intelligence

[4] PYMNTS Intelligence: How Payments Automation and Digitization Can Reduce Errors and Streamline Transactions

[5] Gartner: Success With AP Invoice Automation Requires More Than Paper to Digital

[6] ERP News: Automation for Business Intelligence

[7] Kyriba: 15-Minute Guide to Payment Hubs

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