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## The Power of Asset Consolidation for Households: Lessons from Large-Scale IT Implementations

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**Abstract:** Assets under management have crossed \$100 trillion globally [2]. A typical household invests in 401K retirement account, college savings account, bank accounts, certificate of deposit, stocks, bonds, mutual funds, etc. Many a times these accounts are managed by different financial institutions and often under the care of multiple financial advisors. But there are benefits to managing all the assets together. There are implementation challenges to offering such managed services. This paper discusses some of the best practices followed in large-scale IT systems, along with the benefits to customers from providing such services.

**Keywords:** Asset Management, Fund Manager, Financial Advisor, UMA, Unified managed account, retirement planning, college savings, savings accounts, certificate of deposit.

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### 1. Introduction

Unified Managed Account (UMA) [1] is a type of investment account that consolidates various asset classes, investment strategies, and services into a single account. It is designed to provide investors with a more integrated approach to managing their investments. UMA can include a mix of stocks, bonds, mutual funds, ETFs, and alternative investments, allowing for greater diversification within one account. Investors can often tailor the UMA to their specific investment goals, risk tolerance, and preferences. UMAs are typically managed by investment professionals who handle the day-to-day decisions and adjustments, while the account holder benefits from a cohesive strategy.

Many UMAs incorporate tax management strategies to help minimize tax liabilities, such as tax-loss harvesting [4]. The fees can vary, but UMAs often have a flat management fee or a fee based on a percentage of assets under management, which may include both investment management and advisory services. UMAs are popular among high-net-worth individuals and institutional investors looking for a more streamlined and holistic approach to managing their investments.

### 2. Problem

While investing through UMA accounts is a great opportunity for individuals, they are only popular among high-net-worth individuals and institutional investors looking for a more streamlined and holistic approach to managing their investments. The fees associated with UMA accounts are very high [3]. Being High-net-worth individuals should not be the only criteria to avail UMA services. Technology should be leveraged to make UMA services available for any individual.

The important factor for the higher fee on UMA services is the huge involvement and dependency on financial advisors and account managers assigned to each account. There is a limit for human involvement to constantly monitor the asset performance when asset types are so diversified.



### 3. Solution

While it is essential to have accounts being managed by professionals, there is scope for automating many asset management processes using Robo-advisory solutions. The use of AI and ML in suggesting asset investment, asset diversification, and trading of assets can play a major role in improving the operational efficiency of UMA products. This can make UMAs more affordable for everyone.

Most of the processes involved in operating an UMA account can be performed efficiently by implementing an advanced Asset Management system. To improve the services offered by UMA products, the system needs to be built with capabilities to handle data in various forms from different data sources. Essentially, data lake capabilities will help systems process data in any format and help derive strategies by analyzing the data for account management. The personalized strategies generated for each customer can be either auto approved or marked for manual review by defining the parameters accordingly.

Developing an asset management system for Unified Managed Accounts (UMAs) is a significant undertaking that requires a blend of financial expertise, technical know-how, and user-centric design. Here's a structured approach to developing such a system:

#### **Define Objectives and Requirements:**

Ensure the system meets the needs of clients for comprehensive reporting, ease of access, and personalized investment strategies. Support advisors in managing portfolios efficiently, providing insights, and ensuring compliance with investment guidelines. Include portfolio management, trading capabilities, performance tracking, reporting, compliance monitoring, and integration with custodians.

#### **System Design**

Implement a modular architecture to facilitate updates and scalability. Key modules may include account management, investment management, reporting, and compliance. Ensure integration with various data sources, such as custodians, trading platforms, and market data feeds.

Provide clients with dashboards, performance reports, and access to their investment data. Develop tools for advisors to manage multiple portfolios, perform trade executions, and generate reports.

#### **Predictive Analytics**

Most of the automation and reduction of dependency on account managers, financial advisors and analysts can be reduced greatly with predictive analytics using AI and ML

Implement ML algorithms to predict the future performance of assets based on historical data and market trends. ML models can adapt to changing market conditions and adjust portfolios in real-time. ML models can be used to optimize trade timing, maximize returns, and identify opportunities for tax-loss harvesting and other tax-efficient strategies.

Leverage AI to determine optimal rebalancing strategies based on portfolio performance, market conditions, and client goals. Utilize AI-driven algorithms to execute trades efficiently, based on predefined criteria and real-time data. There are several other processes, as listed below, that can be developed using AI and ML technologies to reduce dependency on advisory solutions.

**a. Analytics Dashboards:** AI-powered dashboards can provide actionable insights into portfolio performance, risk metrics, and market trends.

**b. Anomaly Detection:** ML algorithms can detect anomalies in portfolio performance and alert advisors to potential issues.

**c. Natural Language Generation (NLG):** Implement NLG to automatically generate detailed and comprehensible reports based on client-specific data.

**d. Behavioral insights:** Develop AI models to understand client behavior and preferences, enabling more personalized investment recommendations.

**e. Engagement Optimization:** AI can optimize client engagement strategies based on behavioral patterns and interaction history.

**f. Client Behavior Prediction:** Predict clients' future investment behavior based on past interactions and market conditions.

**g. Adaptive Models:** Continuously train and optimize ML models based on new data and evolving market conditions. Build feedback mechanisms to improve model accuracy and performance over time.



### Data Management

Create a robust database schema to handle various asset classes, transaction data, and user information. Implement ML to enrich data with additional insights, such as market sentiment or economic indicators. Utilize AI for real-time analysis of streaming data, such as market prices or transaction feeds, to make timely decisions.

### Account Features

**a. Consolidated account view:** Combine various investments (stocks, bonds, mutual funds, ETFs) into a single view. Allow for personalized asset allocation based on client preferences and risk tolerance. Facilitate trade execution and integration with trading platforms.

**b. Reports:** Provide up-to-date performance metrics and historical data. Compare portfolio performance against relevant benchmarks. Generate comprehensive statements that include performance, transaction history, fees, and customizable reports based on client or advisor needs.

**c. Integration with external systems:** Develop or utilize APIs for integration with third-party systems, such as custodians and market data providers.

### Compliance and Risk Management

Ensure the system complies with relevant regulations (e.g., SEC, FINRA). Implement mechanisms to continuously monitor transactions and ensure compliance with regulatory requirements. AI can be used to detect unusual transactions or patterns that may indicate fraudulent activity.

Develop models to assess and forecast the risk associated with different investment strategies and asset classes. Use ML to conduct stress tests and assess how different market scenarios might impact portfolios. AI-driven models can evaluate and mitigate various types of risk, such as market risk, credit risk, and liquidity risk.

## 4. Conclusion

Beyond developing Asset Management systems with the help of AI and ML to assist financial advisors and account managers to be more productive, AI can be leveraged to build chatbots to answer common questions and assist with account management. Sentiment analysis can be obtained with ML models.

By integrating AI and ML into UMAs, we can enhance decision-making processes, improve efficiency, and provide a more personalized experience for both clients and advisors. This technological advancement not only optimizes portfolio management but also ensures that the system adapts to the dynamic nature of financial markets and client needs. More importantly, the use of these advanced technologies can make UMA services more affordable and efficient. Technology can be leveraged to make UMA services available not only for high-net-worth individuals, but for everyone who wants to consolidate their assets and manage them together to reach their financial goals.

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