

Unmaze – Personal Finance done right

Personal finance¹ is rarely taught as a part of formal education, and young earning individuals are often ill-prepared to tackle financial problems. Financial illiteracy leads to poor financial planning, which can result in less wealth and more debt. Poor fiscal foresight can also undermine retirement plans.² Moreover, the traditional financial services industry is often inaccessible, expensive, or biased for the average consumer.

In recent years, clamor around personal finance has reached fever pitch, and for a reason.

Globally, geopolitical, healthcare, and economic crises have had a significant impact on spending, saving, and investing habits of middle-class households.

In India, even as more Indians are entering the middle class (55% by 2025^{3,4}), 70% consumers now place greater emphasis on securing the future by increasing investments and savings – signs of uncertainty in the public mind around health, education, and the overall stress on infrastructure.⁵

Clearly, these unique times have created a unique set of challenges when it comes to planning personal finances.

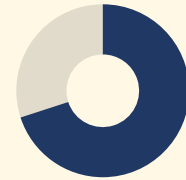
At Unmaze, we believe that we have a solution to these challenges.

Executive Summary

Achieving financial well-being is not as simple as creating a lump-sum corpus or investing in securities with the highest projected return – there's more to it!

Individuals need insight into their personal finances, in addition to finding the right avenues to invest and save their money depending on their overall financial and behavioral profile.

Unmaze alleviates these problems by providing personalized and actionable financial planning to individuals, while reducing the entry



Post-pandemic, close to 70% Indians emphasize securing future by increasing investments and savings.

With Wyzen, individuals can gain insight into their personal finances.

¹ Personal finance planning is the process of managing your money to achieve personal economic satisfaction. It involves setting financial goals, creating a plan to reach those goals, and putting the plan into action.

² <https://www.5paisa.com/blog/top-5-financial-issues-that-young-adults-face-today>

³ <https://www.emerald.com/insight/content/doi/10.1108/JABES-07-2020-0080/full/html>

⁴ <https://www.financialexpress.com/opinion/the-rising-importance-of-the-middle-class-in-india/2223544/>

⁵ <https://www.financialexpress.com/money/nearly-70-indian-consumers-have-increased-savings-and-investments-post-pandemic-report/2220208/>

barrier for the average user. It also helps the user learn the essential concepts related to how to manage their finances, so that their money works for *them*, and not the other way around.

Personalized, Intelligent Investment Journeys

Personalization is a core principle at Unmaze.

Unmaze generates personalized investment advice for the user based on their financial profile (e.g., income, expenses, assets, and liabilities) and their behavioral profile (e.g., risk appetite, life goals, time horizons and psychological traits). This data is integrated to build **journeys**: *plans-of-action that keep evolving in tandem with the user's needs, to achieve the financial goals set by them.*

Wyzen provides the user with personalized and actionable investment guidance, which is rooted in robust economic theory.

Creating value with Portfolio Optimization

Portfolio Optimization⁶ is an essential aspect of maximizing one's investment prospects. It is mainly based on Modern Portfolio Theory (MPT)⁷ which was introduced by Harry Markovitz in 1952. Unmaze uses this and other sophisticated mathematical and statistical techniques to provide the user with *tailored, timely and actionable investment recommendations.*

Credible learning resources

Unmaze bridges the gap between theory and practice by providing the user credible and easy-to-digest learning resources.

Using these learning resources, the user can take more prudent decisions about their finances, rather than following advice blindly. *Knowledge enables the users to unleash the full potential of personalized financial recommendations.*

Technical Deep Dive

The backbone of Unmaze's workflow can be seen as an orchestration between three aspects that are briefly discussed above: (1) Secure and non-invasive data acquisition, (2) Goal-based and actionable financial advice and (3) Educational resources for financial well-being. These services leverage sophisticated software engineering backed by rigorously tested research in behavioral economics. This makes Unmaze an ideal co-pilot for user's financial endeavors.

Secure and non-invasive data acquisition

Unmaze is designed to *infer* the financial and behavioral user profile from various data sources.

User's financial profile is populated and maintained based on the government-issued IDs (e.g., UIDAI/Aadhaar, PAN etc.), as well as the data gathered from third-party Account Aggregator (AA) entities such as CAMS FinServ, Finvu, OneMoney.⁸ This type of data acquisition is inherently secure, as it neither accesses nor shares user's financial data without their explicit consent.

⁶ Portfolio optimization is a process of choosing the best combination of assets to invest in, according to some objective. The objective usually involves maximizing the expected return of the portfolio, while minimizing the risk or volatility.

⁷ Harry Markowitz. "Portfolio Selection." The Journal of Finance, Volume 7, No. 1, 1952, Pages 77-91.

⁸ <https://sahamati.org.in/account-aggregators-in-india/>

While financial data can be acquired from various sources such as questionnaires, understanding behavioral data is far more challenging. Unmaze will use various formal models to discover and educate the user about their behavioral traits that play a major role in the investment decisions (e.g., risk propensity, cognitive biases, risk perception, and subjective financial risk attitude).^{9,10,11}

Actionable investment journeys

Use of Modern Portfolio Theory (MPT) by Harry Markowitz and its various extensions are the bedrock of Portfolio Optimization (PO). Unmaze builds on this to provide a framework for setting up investment journeys. The central assumption behind investment journeys is that *an investment is a means to an end-goal*. Also, there is a notion of risk-propensity attached to every investment journey, depending on its perceived significance in user's life. Based on this, Unmaze helps allocate funds either into high yielding but risky sub-portfolio(s) or lower yielding but safe sub-portfolio(s) to every journey.

Unmaze uses some of the most widely used techniques such as Mean-Value Optimization (MVT)¹², Behavioral Portfolio Theory (BPT)¹³, Value-at-Risk or Conditional Value-at-Risk (VaR or CVaR)¹⁴ to carry out PO at every stage of an investment journey. Moreover, by tracking market conditions and dynamic changes in the user's financial profile, Unmaze aims to provide suggestions as to how the user can modify their plan-of-action so that they meet (or in many cases, surpass) the end goal.

Educational resources for financial well-being

Unmaze understands that knowledge of the core principles of personal finance are essential for one's financial well-being. Although our mission is to take the weight of making these decisions off the user's shoulder, we strongly believe that a firm grasp over these fundamentals would unleash the user's potential to the fullest. To achieve this, Unmaze integrates learning modules that educate users not only about financial advice and suggested securities to invest in, but also about how to develop and maintain a good financial hygiene.

To summarize, Unmaze lets the user take control of their financial future and invest with confidence. Whether you are a beginner or an expert, Unmaze helps you succeed as an investor.

"The goal isn't more money. The goal is to live life on your terms."

- Will Rogers

⁹ <https://www.emerald.com/insight/content/doi/10.1108/AJEB-06-2021-0074/full/html>

¹⁰ Gai, Prasanna, and Nicholas Vause. "Measuring investors' risk appetite." (2005). <https://www.ijcb.org/journal/ijcb06q1a5.pdf>

¹¹ Duy Bui, Linh, et al. "Determinants of the possibilities by investors' risk-taking: Empirical evidence from Vietnam." *Cogent Economics & Finance* 9.1 (2021): 1917106.

¹² <https://www.investopedia.com/articles/investing/041213/modern-portfolio-theory-vs-behavioral-finance.asp>

¹³ <https://blogs.cfainstitute.org/investor/2013/06/04/behavioral-portfolio-management-an-alternative-to-modern-portfolio-theory/>

¹⁴ Gunjan, Abhishek, and Siddhartha Bhattacharyya. "A brief review of portfolio optimization techniques." *Artificial Intelligence Review* 56.5 (2023): 3847-3886.