Alkanza: Customization, Gamification, and Behavioral Science

Alkanza is an SEC registered investment advisor providing automated, online wealth management based on financial mathematics and behavioral science methodologies.

To find out about the company, I visited their new office in California and was happy to talk to Andrés Villaquirán, CEO.

Andrés has been involved in the financial industry for approximately 20 years. He studied economics, mechanical engineering, and management science at MIT and holds a master’s degree in financial engineering from NYU, a master’s degree in financial mathematics from Stanford, and a PhD in statistics from Stanford. Andrés has worked for JP Morgan and Credit Suisse.
The road to creating Alkanza

Andrés’ first entrepreneurial business was a financial consulting company that helped corporations in Latin America to obtain a very detailed and quantifiable measure of how much uncontrolled risks—such as those associated with commodity prices, currency prices, or interest rates—were impacting their businesses. There, he started to understand how to quantify something and how much it could affect a business at different levels. However, Andrés wanted to go for a more scalable business and thereby thought about helping financial institutions improve the way they serve their clients:

“We wanted to be a part of that. We set up the company, Alkanza, as a B2B business. We partnered with financial institutions [and] then we become their wealth-management digital solution.”

According to Andrés, Alkanza is purely a technology player. They are not interested in customer acquisition; instead, the company focuses on implementing new technology and algorithms into the asset-allocation problems.

What makes Alkanza different?

Many robo-advisors offer investors one of 5–10 different model portfolios based on the amount of equity and fixed income. In contrast, Andrés believes that the choice should be based on more than two dimensions:

“Now that capital markets are so widespread and so interconnected your choice is significantly different than just two dimensions. If you go to the equity of space, you have a bunch of different industry-specific indexes. If you go geographically, you have a bunch of different currencies.”

When it comes to asset allocation, Alkanza implements machine-learning algorithms to offer an efficient portfolio for each user, and as a result, each user has a specific portfolio for each of their plans and goals:

“Customization and personalization is what people want. Now that we have the sophistication from a mathematical point of view and a technology point of view—that’s what people expect.”

Andrés says that their platform processes 3 million portfolios every day. As a result of such customization, even two identical portfolios at the beginning may generate two different portfolios throughout the term due to minor differences in regularity and/or the size of the contributions, for example.
Engaging with clients

As the next step in the company’s evolution, the data science team, who began as financial mathematicians, are now also a behavioral science team. This helps Alkanza to provide financial advisors with customization and personalization, by automating the process:

“If you do have a financial advisor, you would expect that financial advisor to actually give you advice for you and for what you’re trying to do. That’s what we are building here.”

The platform does not work with asset classes, but with underlying assets. According to Andrés, they have over 1,000 underlying assets, which significantly improves diversification.

Having built the algorithm, which is asset-agnostic, the company sets it up with ETFs, mutual funds, single stocks and bonds, and their combinations.

The gamification of risk assessment

It is very important for Alkanza to understand the end-investor’s goals and their actual risk tolerance; however, people are not ready to spend hours filling in questionnaires. This is why the platform’s UX is designed to make users feel as if they are playing, not making trade-off decisions.

Andrés provides an example of the game that was launched a few months ago. The user sees a deflated balloon that they need to inflate. As they click, the balloon inflates and the user gets some points. To show the user’s risk tolerance, they have to release the balloon before it becomes overinflated and bursts. The number of points on release shows the user’s risk tolerance. If the balloon bursts, the user loses all the points.

“If you’re a risk-logging person, you’re going to try to maximize the number of points even though you’re taking the risk that the balloon is going to burst and you’re going to lose all those points. If you’re a risk-averse person, then as soon as you get a few points you’re just going to put those points away and release the balloon.”

Andrés is sure that people intuitively show their actual risk tolerance when playing this game, whereas if they were being asked a question they may not understand how to answer, especially if they have never invested money before.
The rebalancing algorithm

Rebalancing is another aspect that differentiates Alkanza from other financial platforms. Alkanza’s algorithm has no schedule for rebalancing; instead, it evaluates each portfolio on a daily basis and then makes a decision on whether rebalancing is worthwhile. The algorithm does this by taking into account the size of the portfolio, the assets in it, the cost of a trade, and many other issues that should be checked to prove the rebalance will add value and should therefore be triggered:

“If you have a small portfolio that has maybe $1,000 on it versus a portfolio that has $1,000,000 on it, and if it might cost you $5 to trade, that might not be very significant for a $1,000,000 portfolio, but for a $1,000 portfolio it’s very significant.”

Integrations

Alkanza aims to be an international company, which is why it has already integrated, or is in the process of integrating, with financial institutions in the US, Mexico, Columbia, Brazil, the UK, South Africa, Malaysia, and Taiwan. They integrate with banks, asset managers, brokers, insurance companies, etc.

“Right now we have partnered with 10–15 financial institutions. Our goal is to grow that number to about 40–50 over the next couple of years. The ones that we have partnered with so far have around 70 million clients and about $1 trillion in assets under management.”

The challenge here is not only to make sure that their product is scalable, but to adapt it to different cultural and target markets. For this reason, the company does not offer a pure white-label solution:

“We have, let’s say, [an] 80/20 mix, or 80% of the product is white-label. You really can’t change it. That has a lot to do with the engine and everything that writes data. Then you have another 20% [that] we are able to customize. That has [more] to do with UI and UX. We’re able to set up certain targets, certain types of customers, cultural differences, etc.”

The company size and structure

Alkanza has 70 employees now, and plans to expand its staff to approximately 110 by the end of the year. The most important team at the company is the data science team. It is
divided into financial mathematics and behavioral sciences. The company also has an engineering team—headed by the CTO, George Collins—and a product team.

To grow partnerships, Alkanza is setting up a business development team. It also has some internal-operations staff.

“Our three main teams are the pillars of the company; that is, data science, product, and engineering.”

Technology stack and architecture

Andrés kindly invited George Collins to share details about the technology side of the platform.

The platform has a web application with iOS and Android mobile apps.

Alkanza predominantly uses open-source technologies, so it does not depend on commercial software. The front-end is built using JavaScript and React Native. The databases used are MongoDB and PostgreSQL.

From a data-science perspective, the company moves to scikit-learn, which is Python-based. The mathematics team uses the open-source version of MatLab. The company intends to take advantage of TensorFlow from a machine-learning perspective.

Alkanza have also started to use Spark and Scala. To integrate with some of their partners, they sometimes need C++ implementations.

George describes the platform architecture as service-based, with services available via APIs. Each partner is a separate instance.

For deployment, the company uses a combination of Docker and Kubernetes. Github is used for version control.

In terms of full automation for the front-end, Jenkins and Selenium are used.
Development process

George explains that the company has two types of development activities:

1. Core product development
2. Workload partners

When working internally on the product, the team operates in two-week sprints—Wednesday to Wednesday. However, the team may be constrained to how partners work when Alkanza integrates with them; then they have some hybrid processes because they need to integrate with partners’ workflows.

Alkanza releases its product every couple of weeks—these are mainly minor releases when new partners are integrated or a new functionality is built into the core product. George says,

"With the B2B model, it’s more of a negotiation on when they [partners] are able to take those releases."

A better-than-bank-level security and other challenges

According to George, the biggest challenge that Alkanza faces is to provide an extra layer of security that goes beyond what the typical banks are looking for. This means that the company must be able to meet any data-protection regulations and standards that are set, and is aiming to become the number one platform for the implementation of security for financial institutions.

With respect to Alkanza’s other challenges, George mentions the lack of talented developers that would enable them to advance the quality of their staff and product. George explains:

"Our ideal engineer is a full-stack engineer. We’re a scrappy startup and we’re fighting with everybody else in the trenches for that."

In the US and Latin America, where the company has a big presence of software developers, the financial mathematics team runs an onboarding program to help developers understand the core algorithms and the entire wealth-management lifecycle.
Industry trends and future expectations

Andrés shared his thoughts about the trends in the WealthTech industry and the future of Alkanza. First of all, Andrés is confident that their strategy for machine learning and a B2B product is working well. Although a few years ago a lot of financial institutions were looking at robo-advisory and digital wealth management as a B2C product, today they prefer mixed solutions where they can build relationships with their clients while the back-end of the workflow is built by a pure technology company—and Alkanza has been proving itself successful in this field.

Andrés hopes to keep partnering with global financial institutions and data companies, and thus to generate more change and disruption in the industry.

Final thoughts

Alkanza is an extremely fast-growing startup, and their approach to data analytics and machine learning appeals to me. Their main challenge today is to grow whilst maintaining the company culture and strategy provide to an excellent product. During the conversation with Andrés and George, I clearly understood their care for the product and their pride in their achievements.

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