

Trade Advisor - Business Model

Gestão de Projectos e Empreendedorismo

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PROBLEM & MARKET OPPORTUNITY

Description and problem size:

Nowadays, despite everything being digital and more accessible, entry into the stock market requires an ever-increasing amount of money and knowledge to generate profit rather than losing the investment over time.

This problem affects people of all ages. Once people start to age and accumulate some steady income due to having progressed in their career, they have already reached a point where they lack the time to properly study on how to venture into the stock market. On the other hand, younger people, despite have more time and capacity to learn, tend to have less readily available wealth to invest.

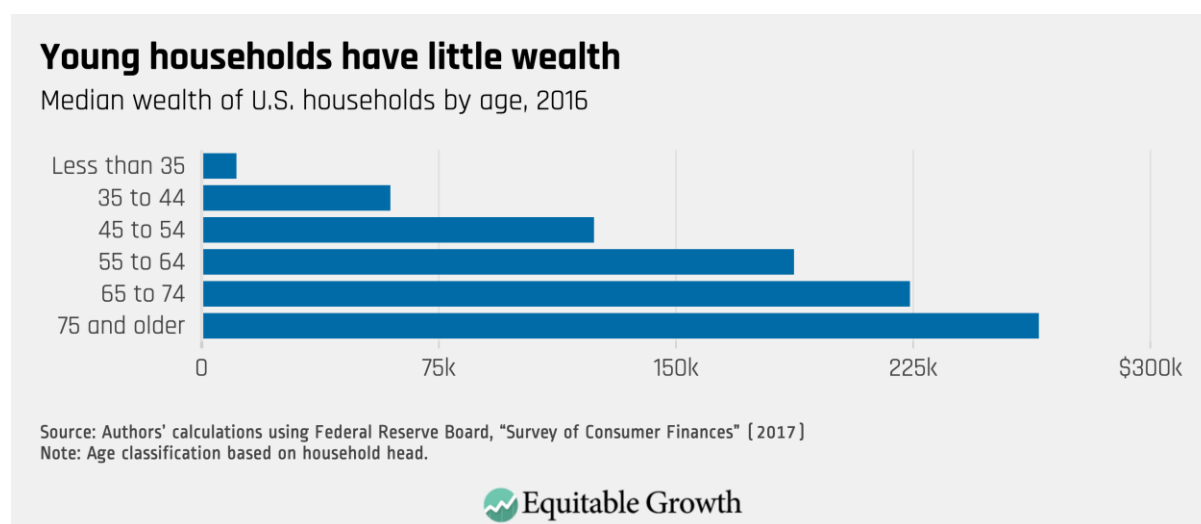


Figure 1: wealth distribution by age

In Figure 1, wealth distribution by age can be observed, information which validates the previous claims about wealth distribution (less than 35 years implying more time (deduced) yet less wealth; more than 35 years implying less time (deduced) yet more wealth). The figure dates to 2017 due to more recent information being locked behind a paywall.

Next to age, there are other problems in the distribution of wealth in the US. This is because a great portion of wealth is concentrated on a small minority (over 75% of the wealth is distributed among 10% of the population). That information can be observed in Figure 2.

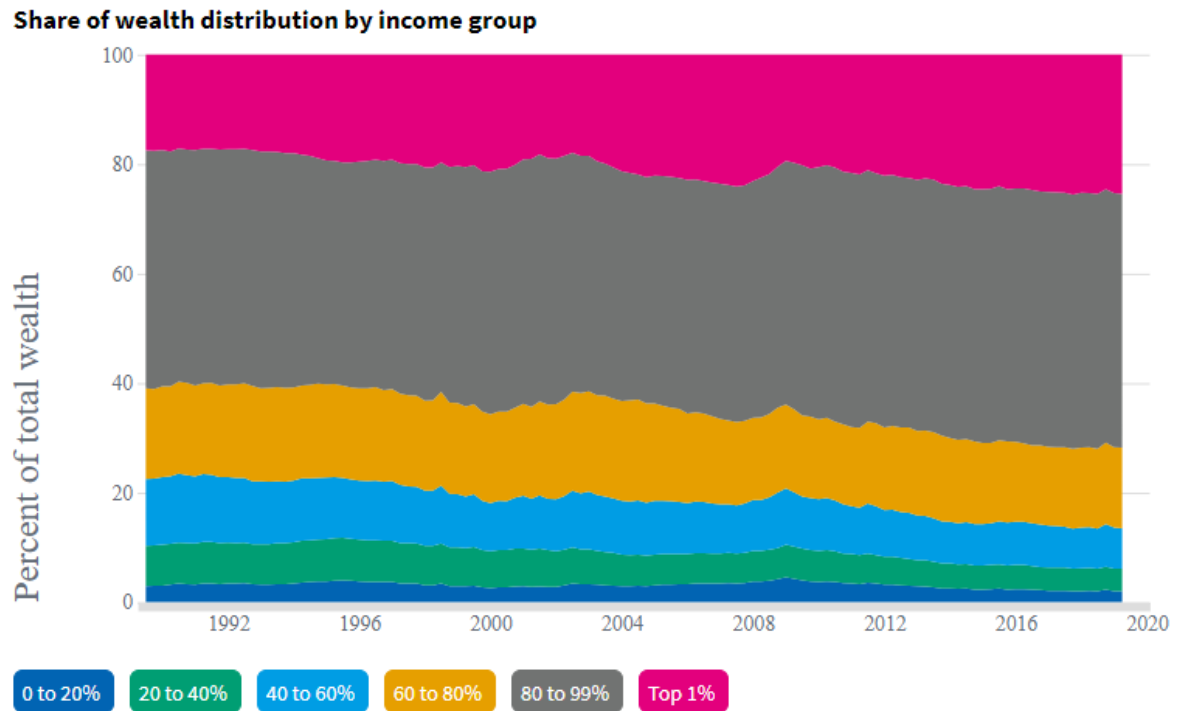


Figure 2: wealth distribution by % population

Market opportunity:

This project intends to fill the gap that exists between people with medium to low income and low knowledge about the financial market. By doing this, the affected target population can more easily start investing in the stock market, having to worry less about their prior knowledge or experience in the field of business/finance.

SOLUTION: PRODUCT OR SERVICE

Solution presentation:

TradeAdvisor, the solution concept, is an application that offers any user the possibility of receiving a prediction on success rates for various companies that are available to be invested in. This prediction is calculated by an artificial intelligent agent which is fed information over time to keep improving its accuracy.

Users can deposit their own wealth into the application and then browse a selection of companies which had their previous data explored. If, after seeing the given data, a user decides to invest in a company, then TradeAdvisor handles the investing process by working as a man-in-the-middle. Over time, users can check the statuses of their current investments and decide to sell their stock at any moment. Every operation related to investments is handled for free.

Once users decide to cash out, their earned wealth is returned to them, with a deduction of 2.5 euros to cover for the generated predictions they had access to help with their investments.

Considering the previously enunciated services, the application generates value by simply being used. Be it by a user succeeding in their investment or not, a portion of their remaining wealth is deducted.

Despite the application being usable (and possibly appealing) to most users, there is a target audience: new investors with either limited wealth or no knowledge in the field. The solution concept satisfies both needs by not only guiding these new investors through the process and providing feedback via the previously enunciated predictions, but also by allowing them to start with a small amount of wealth and continue from there.

This concept stands out when compared to the competitors due to its resemblance to not only gambling applications but also educational ones, creating an interesting mixture that not only gets people invested into it, both financially and mentally, but also provides them with meaningful experience in the field that they can keep using in other sectors of the business/financial world.

Customers who decide to use the application should experience an increase in wealth, be it at a slow or increased pace, due to the high accuracy of the developed artificial intelligence, as well as statistical values to make their own decisions regarding investments in the future.

Any customer can use the application, be it those with low wealth, low knowledge or both, however those with increased starting wealth values are the most important ones. Their importance grows even further the less experienced they are in the field. If a user is willing to invest a higher fortune and needs the application's predictions for an increased amount of time, then it means they generate an increased amount of value than those who use the application for less time (who may not even grow accustomed to the application to comfortably use it more often).

Validation strategy and results (problem-solution fit):

To validate the concept solution, both the target audience (to find and improve any interface and/or usability downsides) and a group of financial and economic experts (to help validate both the results and the technical details which would be at fault) were approached. For this, usability tests and small questionnaires regarding the application's utility were conducted.

Unfortunately, due to the pandemic, personal interviews (with many people belonging to the desired target audience) and usability tests could not be easily conducted. With these restrictions in mind, it was chosen to first interview people with whom project members have regular contact, such as roommates and other course colleagues. Results were obtained via videocalls, meaning that usability tests were always compromised (be it either because inserting the test subject's answers onto the mockup interface was done by the project members, which led to a slight natural bias towards the right answers, or because the target users did not have a good perception of the interface as if it were to be on their phone).

The conducted usability tests (totaling thirty) were composed of the following tasks:

- I. Simulate a deposit from their bank account (using PayPal).
- II. Simulate an investment (buying and selling of stock).
- III. Check their exchange history.
- IV. Withdraw money to their bank account (using PayPal).

From the thirty people interviewed, the following results were obtained:

- I. 17 users navigated through the application with ease and seemed to easily understand the concept of what was being shown to them.
- II. 11 users had some difficulty with the interface, more specifically the pass or invest mechanic, but still managed to perform the tasks.
- III. 2 users struggled harder on how to deal with a mobile application and had to be continuously assisted to accomplish the same results as the others.

In terms of utility testing, most of the inquired thought of it as a good application but not to for daily usage. It was also noticed that few knew of e-trading applications and noticed that, by comparison, the application seemed simpler to use but did not display as much information as others, such as Robinhood and eToro. The few inquired who were knowledgeable of e-trading platforms liked the application's feature of being able to give some council regarding what to invest in without being copy-trading recommendations.

The project's technical validation was discussed with two people who had more area expertise than the project members. Taking their feedback into account, the project's business practices were adjusted seeing as the concept of predictions could generate legal issues when faced in the court of law (in the established country, Portugal).

These tests were of special importance to the project members as they helped with many details, big and small, that were being misconstrued by some of the members.

In terms of technical legalities, the tests that were run helped the project members to better understand certain matters that could compromise the existence of the application and some cases where legal action could be taken due the spread of false information. This helped with understanding the amount of certainty needed to recommend a small

investment. Additionally, the group was provided with information that helped increase the accuracy of the developed AI models with the source's given data (the Finnhub data marketplace).

MARKET

The stock market is the biggest market on the planet. This market moves almost 50 trillion euros annually, with the US having the largest stock market, as can be seen in Figure 3.

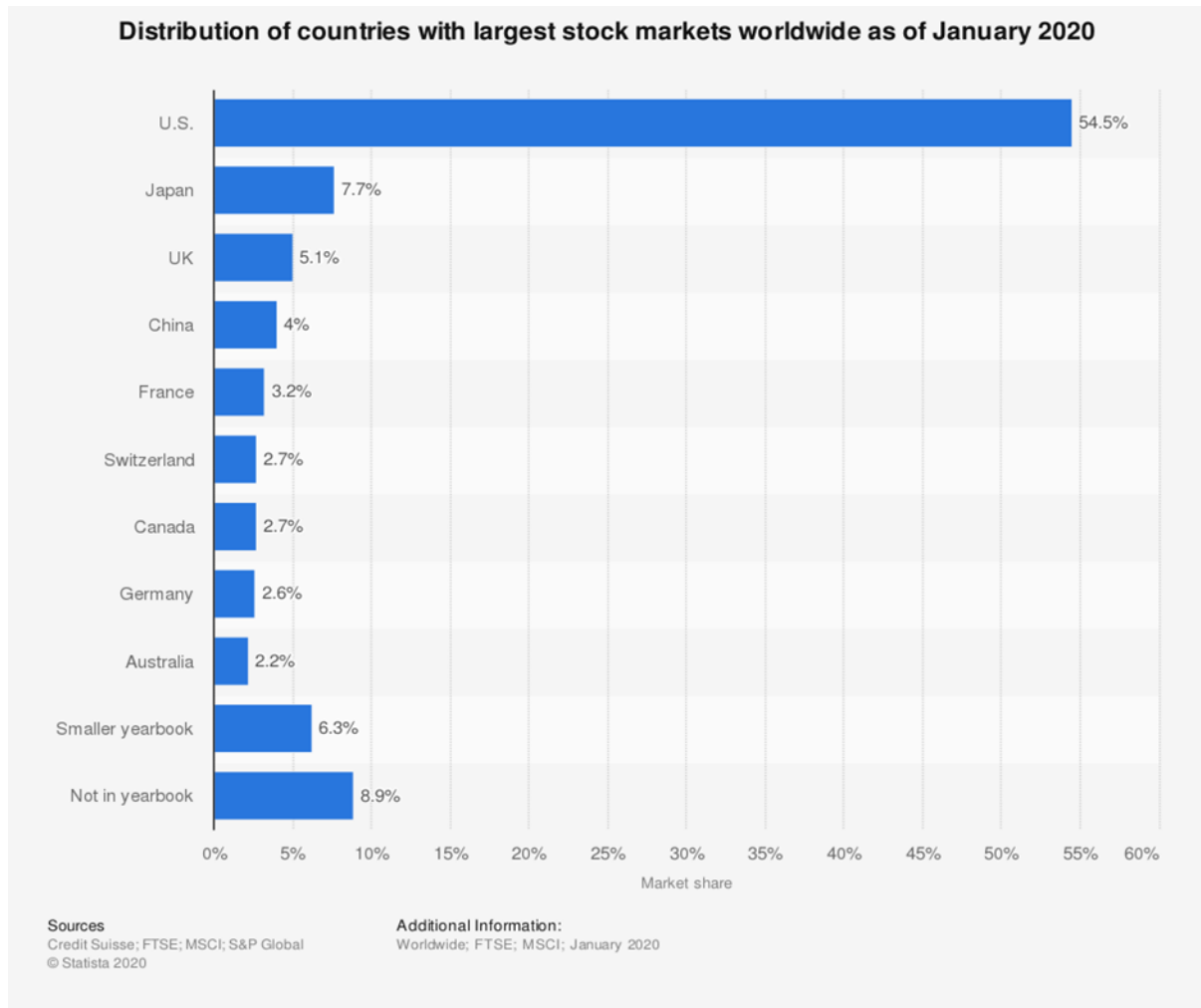


Figure 3: Global stock market distribution by country

As such, this is the market that was decided to dive into.

By looking to who holds the stock, it can be observed that 11% is currently being held by people investing using pension and government retirement funds. These are people who have retired and possibly mostly those who worked in business related jobs during their careers. The thought of the concept aims at improving accessibility to people of older age who have no knowledge in the area, this way taking advantage of an unexplored market, also increasing the number of shares being held by this group. The data can be seen in Figure 4.

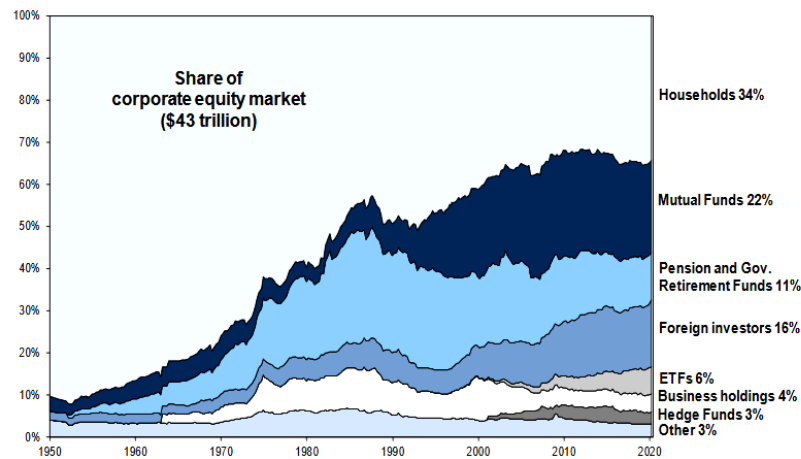


Figure 4: Stock distribution by groups

Lastly, the impacts of age, education qualifications and income generation will be explored. As can be seen in Figure 5, people with higher income invest a lot more in the stock market; with increase in age, people invest more in the stock market, up until the age of sixty-five; and people that have a higher level of education hold more stock. This last observation is due to two factors. One of the factors is that some companies have resorted to paying their employees in stock to keep them both interested in making the company grow and valuing the stocks that they own; the other factor is that an increased education qualification leads to more knowledge and more investigative capacity, which leads to a better of understanding the opportunities on the stock market.

Stock Ownership Among Major U.S. Subgroups, 2020				
	Yes, own stock	No, do not	No opinion	No. of interviews
	%	%	%	
U.S. adults	55	45	*	2,027
Men	58	42	*	1,052
Women	52	47	1	975
18-29	32	68	*	298
30-49	59	41	*	526
50-64	66	33	*	541
65+	58	41	1	642
Non-Hispanic white	64	36	1	1,458
Non-Hispanic black	42	58	*	200
Hispanic	28	72	*	224
Postgraduate	85	14	*	401
College graduate only	77	23	*	462
Some college	54	45	1	678
No college	33	66	*	459
\$100,000+	84	15	*	501
\$40,000-\$99,999	65	35	*	766
<\$40,000	22	77	*	540
Republicans	61	37	1	624
Independents	51	49	*	726
Democrats	56	44	*	623

Figure 5: Stock ownership by different characteristics

CONTEXT & COMPETITORS

Analysis of external factors (PEST and Porters 5)

Pest analysis:

	Factors to consider	Factors affected within my industry	Importance to organization
POLITICAL	Government Policy Global trade agreements and/or restriction	Creations of new laws can affect the value of certain companies on the market (ex: EUA denying Google Services in China). Government imposed lockdowns restricting in-person shopping. Makes companies close.	High High
ECONOMIC	Economic Growth/Decline Inflation Cost of living/ Minimum wage	Changes in a company's country economics may affect the value of that company. Lows the value of companies. COVID-19 pandemic has added to poor market performance and greater dependence of online shopping. More companies close. Consumer low buying power affects the investment that it can offer reducing the number of actions in our business.	Medium Medium Medium High
SOCIAL	Consumer Age/ Work-life balance	A customer of old age will not try to learn the market to invest. A customer with low time to spend learning the market will not invest	Low Low
TECHNOLOGY	Artificial Intelligence Automation	More intelligent or advance ways of getting information about the market will help costumer invest	High

Porters 5 analyze:

- Threat of New Entry: Medium
- Supplier Power: Neutral
- Buyer Power: Small, exclusive to highly finance and knowledgeable people
- Thread of Substitution: high
- Competitive Rivalry: high, many small competitors, short strong competitors

Competitor's analysis (matrix) and positioning:

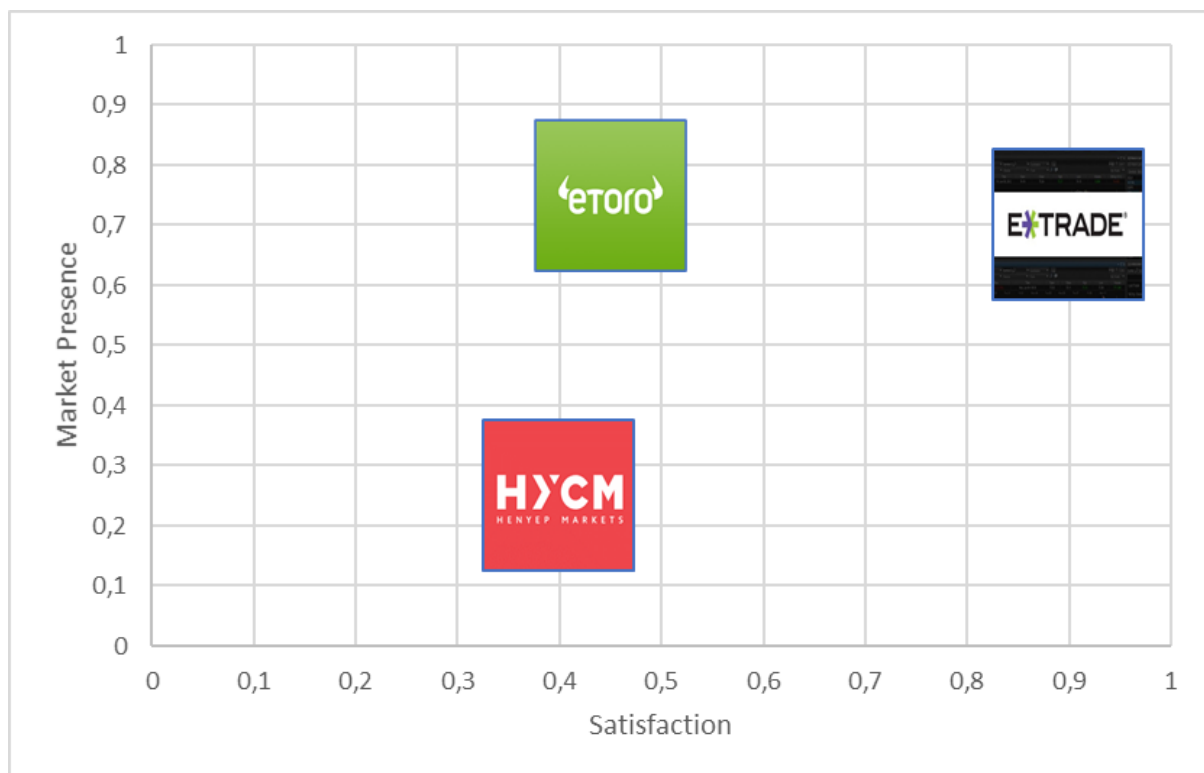


Figure 1 Top Brokerage Trading Platforms

Satisfaction:

The "Satisfaction" rating is based on customer satisfaction data from user reviews.

Market Presence:

"Market Presence" score is a combination of more than fifteen data points from user reviews, publicly available information, and third-party sources.

Data present on the chart comes from [G2 website](#)

BUSINESS MODEL

Business Exploitation

In the conceived business, a continuous relationship is maintained with the clients. The application's information will always be up-to-date and customer service always readily available. This is essential because the application's income is dependent on its users profiting, liking the application and feeling comfortable enough to use it regularly.

The application intends to reach customers through social media platforms and some other digital markets like YouTube to lead people into using the app. These choices to reach people are most effective since people with knowledge in technology (using a computer or cellphone) are the main user prospect. This also means a higher reach with lower associated cost.

The application is free to download and use (no initial cost associated). Customers pay though their balance when they are inactive (which impacts their stock value) or withdraw money (to cover for the AI usage). The charge is made when withdrawals are made or, in the case of inactivity, monthly.

To properly run the business, servers with enough processing power to deal with the costumers and the AI of analysis are needed. This means a low starting cost (1300 euros/month for a low-end server renting) and, with the increase in demand, increased costs to scale the infrastructure.

For the system, the only thing that is required to allow people to use it is for the application to be installed on their smartphone and for the server to be running.

For the base system, partners are not needed. However, if new functionalities were to be added in the future, this fact could change.

The most expensive resources related to the business are the servers/computational power.

It is intended to allow anyone, independently of the money they are willing to invest and their knowledge in financial investment, access to a trading platform that shows them predictions of what they could gain if they were to invest in certain stocks for some amount of time. The pre-analysis of stock value, future predicted value, and the fact that the application does not set a limit on investments is what the applications brings of new to the market.

IMPLEMENTATION STRATEGY

Entry market strategy:

For the conceived idea to thrive in the market, a successful launch is needed otherwise established applications will take over, despite the application's additional features when compared to them, losing out on the market opportunity.

Since fast application growth is one of the most important factors for it to succeed, strong social media advertisement is mandatory. To do this, multiple established advertisement companies focused on social media could be used, such as Google (which controls a great portion of the market) as well as Twitter and Reddit, since they are fast consuming types of social media and have a lower cost than other social media advertisers (such as Facebook and Instagram).

Although social media advertisement greatly assists the application's growth, social media presence is also required. For this, socially mediatic figures could be partnered with to advertise to the public. A company face, or faces, would need to be selected for this campaign as someone who the application's target audience can't relate to would not increase the application's growth. In Portugal, this group would be composed of mostly young actors, TV contest winners and runner-up's, and some social media influencers (YouTube, Instagram, etc.).

Initial partnerships with stock exchange brokers would also be a must as the application is essentially a proxy for brokers, not a stockbroker itself.

Business Metrics:

There are several metrics which can be used to quantify the business model and its overall growth or decay. For this specific project, the most relevant are:

❖ Marketing metrics:

- Increase in the number of investments performed in the application after marketing campaigns. This metric can be calculated by the arithmetic subtraction of the expected investments made in the application without the marketing campaign (e.g., the investments made in the previous quarter) and the actual number of investments made.
- Social sentiment towards the brand. It helps better understand the audience and how to better engage with them in future campaigns by studying the presence of the brand in the marketing mechanisms (social media, blogs, etc.) and exploit this to choose where to next approach in the market.

❖ Sales metrics:

- As the application is "free to use", sale units will instead be the number of investments. Investment growth will measure the application's ability to increase revenue in a certain amount of time (preferably, using yearly quarters).
- Investment allocation may help better understand what and where to fine tune in the business model to increase efficiency as well as accuracy for most searched companies or areas or investment (like technology, energy, food, etc.).

❖ Financial metrics:

- The working capital is a good indicator of business health, as it represents the available assets in case of any short-term financial liability.
- The current ratio refers to the project's current capacity to fulfill all its financial obligations in one year.
- ❖ SaaS metrics:
 - Customer retention rate measures the application's ability to retain a client over time. If the application promotes comfort and investment safety, users are more likely to continue using it.
 - Customer churn rate is the opposite, as it measures the rate at which the application is losing clients.
- ❖ Social Media metrics:
 - The growth in the number of followers on all social media pages, be it Facebook, Instagram, or any other, which gives an indicator of the general popularity and recognition of the application. Comparisons cannot be made between specific time instances to verify whether some social media campaigns lead to more followers or not.

Key aspects:

After the initial release, most competitors will try to overcome their flaws in comparison to the concept product and, for that reason, resource readjustment will be needed, not only regarding developing and testing, but also user experience and feedback departments, as well company relations.

To retain the user base, and even increase it, most of the focus must be directed towards the user feedback present in reviews (Google Play Store for Android and App Store for iPhone). Other alternatives are through the user helpdesk and feature testing.

Most DevOps resources must focus on the product: the self-learning modules for stock prediction, which would require metrics mentioned in the business metrics section.

Continuous promotion of the product is essential to not lose advertisement time shares, as well as to increase the success of a deal with a new broker.

Besides looking for an increasing number of deals with new brokers, healthy relationships must also be maintained with the current established brokers to engage in better deals with the company.

Financial Needs:

The company financial costs can be subdivided in four categories:

- **Infrastructure:** Costs of servers renting and maintenance, offices, spaces, material;
- **Human Resources:** Costs of employees (technical and PR);
- **Commissions & Fees:** Costs to cover investments commissions and brokerage fees made by the users;
- **Marketing:** Costs of marketing campaigns and social promotions.

Infrastructure:

A low-end server with a six 4.4 GHz cores AMD Ryzen 5 3600X and 32GB RAM to run both the service and the AI computations would cost approximately 1300€/year.

Human Resources:

To implement and maintain the system, a minimum of two developers, one designer and one social media manager would be required as a starting point.

The budget for this team, over fourteen months, would total around 72.800€, with each one receiving about 1.300€/month.

Commissions & Fees:

As it is intended to cover transaction costs (such as commissions and brokerage fees), an initial amount of the budget must be allocated for this purpose. The estimated initial amount is 50.000€ for the first semester, with possibility of expansion in case of exponential market growth. This budget is expected to increase at the same pace as transactions executed in the application, however small adjustments must be made at the end of each quarter.

Marketing:

The choices made regarding budget investment at the start of a project can greatly influence its success and failure.

In the first four months, an estimated budget of 30.000€ was calculated (for advertisement in several platforms, social media presence and a filmed advertisement with a national mediatic figure).