

TradeWiz

Capstone Project: TradeWiz

TEAM MEMBERS

M&T Team Members:

Arushi Aggarwal (arushiag@seas.upenn.edu)
Helen Yeung (hmkyeung@wharton.upenn.edu)
Maggie Yu (maggieyu@wharton.upenn.edu)

CIS Team Members:

Acelyn Choi (choihye@seas.upenn.edu)
Yuchen Fan (yucheny@seas.upenn.edu)

Faculty Advisor:

Arvind Bhusnurmath (bhusnur4@seas.upenn.edu)

EXECUTIVE SUMMARY

A current roadblock in the investing space is the lack of a consolidated platform for stock sentiment analysis, which is a nascent field with increasing relevance. TradeWiz is a sentiment analysis platform for stock trading with a vision of becoming the go-to source for understanding market sentiment and providing unique insight for event-driven trading. Keeping up with market trends can be a manual and time-consuming operation amidst a plethora of official and unofficial news sources, and it can be extremely challenging to separate the signal from the noise. TradeWiz creates a dashboard that shows sentiment for top stocks consolidated from sources like Twitter, Reddit, Bloomberg, etc. It isolates main drivers of stock changes by noting which stocks have the most online activity and relevant trends. With the increasing prevalence of sentiment-driven and event-driven trading, our platform will pave the way for traders in this space and eventually pan out to be a fully-functioning recommendation engine as well.

VALUE PROPOSITION

Problem & Pain Points:

Lack of consolidation: Lack of a consolidated platform displaying sentiment analysis for financial instruments such as stocks, options, bonds, etc. With a **plethora of news sources** ranging from official news channels (WSJ, New York Times, etc.), company news channels (company news disclosure, etc.), to unstructured public forums, there is often an overflow of information for investors.

- Firstly, this makes **keeping up with news a manual, tedious, and time-consuming operation**; Individuals and even institutions rely on manually reading the news and feeling the sentiment rather than a rigorous analysis of sentiment
- Secondly, beyond the first-layer "scraping" of information, it is difficult to **separate signal from the noise**.

Nascent field with increasing relevance: Traditional factor-based trading models lack incorporation of sentiment-driven factors, which have increasing relevance in today's market.

- ***Quantitative-based trading strategies*** usually include sentiment as one of the tens and hundreds of factors - we believe this fails to capitalize on tactical sentiment-driven trading opportunities. Having done quantitative research for both small and big hedge funds, there are two trends we see: (1) with an increasing prevalence of "meme stocks" and event-driven trading, we see a lot of value in isolating sentiment out as a factor and making specific recommendations based on that, which will be an enhancement beyond having a "factor all" model like most big funds. (2) smaller funds are attempting to build in-house sentiment analysis tools, but find it hard to dedicate enough resources to this front.
- ***Fundamental-based trading strategies*** usually exclude sentiment as a factor. Having personally worked in a fundamental hedge fund, my boss and my day started with manually reading through news and checking if anything blew up on Twitter, which could take up to two hours. As "meme stocks" and sentiment-driven trading becomes more and more prevalent, we believe the lack of automated sentiment analysis is not only tedious and detrimental (more time wasted on Twitter when I could be crunching numbers and more prone to human error) to purely fundamental strategies, but also a missed opportunity when there is high event-driven volatility.

Vision:

Become the **go-to source** for understanding **market sentiment** and provide **unique insight** for **event-driven trading**.

Solution:

1. **Extraction**: Create a general dashboard that shows sentiment analysis for top stocks/options consolidated from sources like Twitter, Reddit, Bloomberg, etc. Have individual pages summarizing general sentiment keywords for every stock, show sentiment/price analysis and predicted prices. Long term vision is to have a proprietary web-scraping algorithm that can crawl and consolidate as many sentiment data from various sources.
2. **Separating signal from noise**: Identify key events that tend to be the main driver of the stock's price changes. Identify "hot topics" that are happening related to a stock.
3. **Modeling**: Provide buy/sell recommendations based on sentiment analysis. We plan to focus purely on single-stock event-driving trades, in particular, volatility trades. There tends to be a problem of overfitting or lack of significance of sentiment as a factor for indices or when the

stock is less volatile. We aim to provide best insights by focusing on time frames with a lot of event-driven volatility.

4. **Additional features:** Community discussion boards for retail investors, which serves as a side community feature for investors to chat. It allows retail investors to see what fellow individuals are thinking, and for institutional investors to have a glimpse into what the broader market is thinking.

ENGINEERING INNOVATION

Our technical differentiation comes in two folds - data extraction and cleaning, and our sentiment analysis model.

1. Data extraction and cleaning: we dabbled into the tedious process of scraping unstructured data from multiple sites ranging from Twitter to Reddit and reconstructing the data into readable, quantifiable metrics.
2. Sentiment analysis: we tuned the Flair model and combined it with our own sentiment score calculation, backtested against historical performance, to obtain a meaningful sentiment score.

CUSTOMER SEGMENT

We position ourselves as a B2C SaaS provider primarily (upon user research, we identified the biggest need and willingness to pay for our solution in this segment), with a B2B segment for diversification and also fulfilling their market needs.

1. Primary: Retail investors (Individuals), whose needs have been described above.
 - a. Upon user research, we discovered that retail investors have a bigger need of saving time and aggregating news sources to understand the news sentiment over small institutional investors. Retail investors want to understand news sentiment but have less skills or lack the time and attention to fully understand the sentiment of sources, and as a result, find it helpful to have a news aggregation and sentiment indication tool.
2. Secondary: Institutional investors (Businesses), whose needs have been described above
 - a. In particular, smaller funds (below \$5B AUM) who have less resources to build a full in-house solution
 - b. In particular, fundamental investors who rely heavily on manual operations in day-to-day trading.
 - c. Long term customers include global investors who have been a bit slower than the US in developing quantitative trading strategies.

Expansion Strategy

- Offer trial versions to smaller funds and convert to paying customers if they use more advanced services or require more features

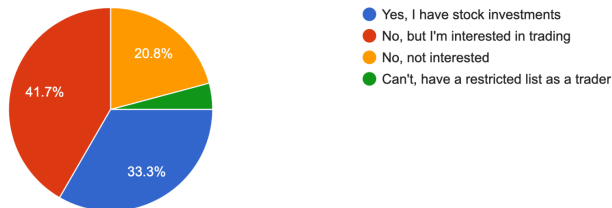
MARKET RESEARCH

Big picture: Size and Growth

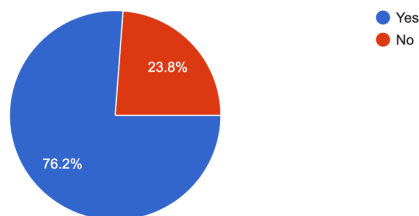
- **Market size of public equity managers and fundamental funds:** The global mutual fund assets market size was valued at \$54.93 trillion in 2019, and is projected to reach \$101.2 trillion by 2027, growing at a CAGR of 11.3% from 2020 to 2027 ([source](#)). There are over 7.5K mutual funds in the US, over 131K globally. Specifically, we target < \$5B AUM public equity managers and fundamental funds, which we estimate to be about 30% of the global fund management market, which is a trillion dollar industry.
- **Retail investors:** About 145 million Americans i.e. 56% of American adults, own stocks
- **Increasing prevalence of meme stocks / increasing prevalence of sentiment-driven trading:** There is an increasingly high positive correlation between meme stocks and overall market. When meme stock jumped 10% or higher, S&P 500 rose on average 0.26% ([source](#)). Over 25% of US investors said they purchased one or more viral stocks this year ([source](#)).
- **Event-driven trading:** Currently, event-driven assets command \$590 billion, or 19% of the \$3 trillion-plus total assets invested across the hedge fund industry, according to market research firm eVestment.

Our survey

Do you buy/sell stocks?
24 responses

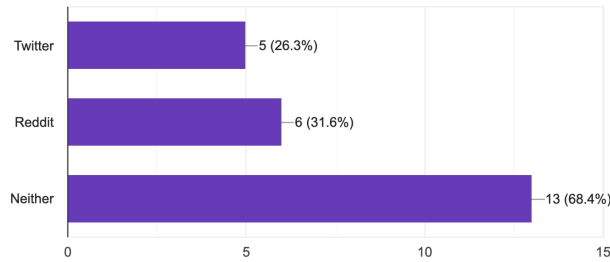


Do you wish there was an easier way to determine which stocks are performing well/poorly?
21 responses



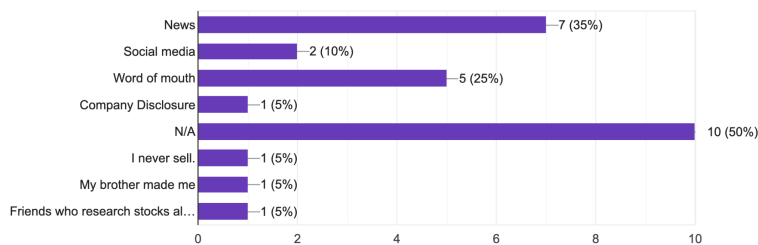
Do you use any of these platforms to decide which stocks to buy or sell?

19 responses



If yes, how do you decide which stocks to buy or sell?

20 responses



- Over 70% of people we surveyed indicated interest in trading
- Over 75% of people wanted an easier way to determine stock performance
- Of those we surveyed who buy/sell stocks, almost all use news, social media, and/or word of mouth

STAKEHOLDERS

- **Institutional investors (customers)**, discussed above
- **Retail investors (customers)**, discussed above
- **Regulators**: so far, there is no regulatory concerns associated with our product and regulators play a minor role in our current scope.
- **News providers (and competitors)**: our take is that the myriad of news providers provide diverse yet unstructured and messy sources that need consolidation. We serve as a third party linkage between news providers and consumers, rather than a competitor.

COMPETITION

We see three main groups of competitors:

Direct Competitors

- StockGeist
 - <https://www.stockgeist.ai/stock-sentiment-features/>

- Process data from the latest social media posts and news updates of over 2200+ selected companies
- How we differentiate: their solution is only focused on following sentiment sources but lacks further analysis of the signals; their target market is the retail investor, whereas we primarily target small institutional investors.
- SocialSentiment.io
 - <https://socialsentiment.io>
 - AI analyzes social media to see if people are posting positive or negative things about the companies you invest in.
 - How we differentiate: they only scrape social media sites Twitter and Reddit, but we will gather information from a larger number of sources. We also provide a unique focus on event-driven trading.
- BTIG
 - <https://www.btig.com/products-services/institutional-sales-trading/event-driven-trading/>
 - Event-driven trading - help clients capitalize on key market opportunities
 - Utilize expertise of traders and insights of analytics team
 - How we differentiate: utilize AI and algorithms rather than providing manually formulated advice.

Platforms

- Bloomberg, Visible Alpha: These are raw investment information providers with a lack of consolidation or analysis of information. We are trying to optimize, speed up, and provide insights on raw news information aggregated from these sources.

In-House Solutions

- Hedge funds with in-house sentiment analysis capabilities. We aim to serve fundamental hedge funds or quantitative hedge funds with limited in-house capabilities, along with retail investors, rather than competing against mature, big quant firms.

	TradeWiz	SocialSentiment.io	StockGeist	Bloomberg
Only Social Media Sources	✓	✓	✓	✓
Holistic News Sources	✓	✗	✓	✓
Isolating important signals	✓	✓	✓	✗
Algorithmic trading suggestions	✓	✗	✗	✗
Event-driven trading focus	✓	✗	✗	✗

COST & REVENUE MODEL

Revenue model

- Freemium model with subscription fee
- Separate accounts/prices for institutional versus retail investors
- Our competitors' plans are priced similarly with on average a free subscription tier, \$20/month for the basic subscription tier, and ~\$100/month for the premium subscription tier.
- At this stage, we expect to start with a bigger pool of free users, and then convert these users to paying users.
- We aim to convert free users to paying users by locking up certain advanced features (including model features that give prediction estimates on correlation of news sentiment and stock volatility) on the platform and limiting the number of stocks being tracked for free users.
- The go to market strategy, which will be reiterated in the user acquisition cost section, is to have advertisements on social media platforms to attract individual / retail investors, and approaching smaller investment firms through direct sales person to establish partnership.

Costs

Database Maintenance Cost

- AWS: expected storage = 0.5GB, at \$0.12 / GB / month storage rate, we expect \$0.69

Information Extraction Cost

- Twitter: free (currently), \$100 / month expected (Twitter recently announced they may start charging \$100 / month for the Tweepy API)
- Bloomberg news = \$40 / month
- Reddit: free

At this stage, in total, we expect ~\$150/month of direct expenses (Cost of Sales).

Operating Costs

- *User Acquisition Cost (aka Sales and Marketing Expenses)*: we are at a stage of rolling out our product and moving towards beta testing so we expect 0 user acquisition cost currently. The average customer acquisition cost for a small B2C SaaS company is \$60-100; we estimate our CAC moving forward to be ~\$50 for each customer acquired.
- *General and Administrative Expenses*: currently, we have 0 G&A expenses. As we scale up, we expect G&A to be maintained at ~10% of our Revenue.
- *Research and Development Costs*: currently, we are relying on our man power to conduct R&D for free with 0 R&D expenses. Moving forward, we budget R&D to be maintained at ~20% of our Revenue, higher than G&A as we place more emphasis on R&D.

The detailed Revenue and Cost projections are as follows:

- We expect a consistent positive Gross Profit and we expect the Operating Profit to break even beyond 10 years realized upon better unit economics (lower customer acquisition cost), exponential scaling of customers, and a better conversion rate of free users to paying users.

Senior Design | TradeWiz Project Writeup
Arushi Aggarwal, Helen Yeung, Maggie Yu, Acelyn Choi, Yuchen Fan

TradeWiz Revenue & Cost Model

Year	1	2	3	4	5	6	7	8	9	10
Revenue										
Total Revenue	\$ 365	\$ 1,137	\$ 5,285	\$ 43,280	\$ 68,625	\$ 117,924	\$ 224,634	\$ 432,137	\$ 774,446	\$ 1,248,768
Subscription Revenue	\$ -	\$ 400	\$ 4,080	\$ 41,227	\$ 65,373	\$ 112,306	\$ 213,838	\$ 412,026	\$ 739,854	\$ 1,195,885
Revenue from Tier 2 Users	\$0	\$400	\$4,080	\$18,727	\$28,653	\$46,761	\$83,469	\$166,019	\$313,278	\$543,223
% growth				359%	53%	63%	79%	99%	89%	73%
% total revenue			100%	45%	44%	42%	39%	40%	42%	45%
Revenue from Tier 3 Users	\$0	\$0	\$0	\$22,500	\$36,720	\$65,545	\$130,369	\$246,007	\$426,576	\$652,662
% growth				79%	99%	79%	99%	89%	73%	53%
% total revenue			0%	55%	56%	58%	61%	60%	58%	55%
Number of Users										
# Users (Tier 1 - free)	1,000	2,000	3,000	4,500	7,200	12,600	24,570	45,455	77,273	115,909
% growth YoY		100%	50%	50%	60%	75%	95%	85%	70%	50%
# Users (Tier 2 - individual)	0	20	200	900	1,350	2,160	3,780	7,371	13,636	23,182
% conversion rate of free to paying		2%	10%	30%	30%	30%	30%	30%	30%	30%
Subscription price per user (Tier 2)		\$20	\$20	\$21	\$21	\$22	\$22	\$23	\$23	\$23
price increase YoY			2%	2%	2%	2%	2%	2%	2%	2%
# Users (Tier 3 - premium individual / institution)	0	0	100	225	360	630	1,229	2,273	3,864	5,795
% conversion rate of free to paying			5%	5%	5%	5%	5%	5%	5%	5%
Subscription price per user (Tier 3)				\$100	\$102	\$104	\$106	\$108	\$110	\$113
price increase YoY					2%	2%	2%	2%	2%	2%
Ad Revenue										
Ad Revenue	\$ 365	\$ 737	\$ 1,205	\$ 2,053	\$ 3,252	\$ 5,617	\$ 10,796	\$ 20,111	\$ 34,592	\$ 52,883
View per day per user	1	1	1	1	1	1	1	1	1	1
Total page views per day (thousands)	1	2	3	6	9	15	30	55	95	145
RPM	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Costs										
Total COGS	\$ 1	\$ 1	\$ 1,202	\$ 1,204	\$ 1,206	\$ 1,211	\$ 1,220	\$ 1,238	\$ 1,265	\$ 1,300
Database Maintenance	\$ 0.69	\$ 1.39	\$ 2.28	\$ 3.88	\$ 6.15	\$ 10.62	\$ 20.41	\$ 38.02	\$ 65.39	\$ 99.97
Storage per 1000 users (GB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total storage (GB)	0.5	1.0	1.7	2.8	4.5	7.7	14.8	27.5	47.4	72.4
Storage rate (per GB/month)	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12
Information Extraction	\$ -	\$ -	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Twitter (\$100/month)	\$ -	\$ -	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Reddit (free)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Yahoo News (free)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gross Profit	\$364	\$1,136	\$4,082	\$42,076	\$67,419	\$116,713	\$223,414	\$430,899	\$773,180	\$1,247,469
Profits										
Operating Costs	\$50,055	\$50,171	\$50,793	\$81,492	\$145,294	\$287,689	\$602,270	\$1,007,234	\$1,480,171	\$1,760,792
Sales and Marketing Cost	\$50,000	\$50,000	\$50,000	\$75,000	\$135,000	\$270,000	\$568,575	\$942,413	\$1,364,004	\$1,573,476
Net New Customers	1,000	1,000	1,000	1,500	2,700	5,400	11,970	20,885	31,818	38,636
Customer Acquisition Cost (per user)	\$50	\$50	\$50	\$50	\$50	\$50	\$48	\$45	\$43	\$41
General and Administrative (10% revenue)	5%	\$18	\$57	\$264	\$2,164	\$3,431	\$5,896	\$11,232	\$21,607	\$38,722
Research and Development (20% revenue)	10%	\$37	\$114	\$528	\$4,328	\$6,862	\$11,792	\$22,463	\$43,214	\$77,445
Operating Profit	-\$49,690	-\$49,035	-\$46,710	-\$39,416	-\$77,875	-\$170,976	-\$378,856	-\$576,335	-\$706,991	-\$513,323

Senior Design | TradeWiz Project Writeup
Arushi Aggarwal, Helen Yeung, Maggie Yu, Acelyn Choi, Yuchen Fan

Year	11	12	13	14	15	16	17	18	19	20
Revenue										
Total Revenue	\$ 1,909,029	\$ 2,918,435	\$ 4,461,636	\$ 6,820,949	\$ 10,428,020	\$ 15,942,823	\$ 24,374,447	\$ 37,265,797	\$ 56,976,009	\$ 87,112,304
Subscription Revenue	\$ 1,829,704	\$ 2,799,447	\$ 4,283,154	\$ 6,553,226	\$ 10,026,436	\$ 15,340,447	\$ 23,470,884	\$ 35,910,452	\$ 54,942,991	\$ 84,062,777
Revenue from Tier 2 Users	\$831,132	\$1,271,632	\$1,945,596	\$2,976,762	\$4,554,446	\$6,968,303	\$10,661,503	\$16,312,100	\$24,957,513	\$38,184,995
% growth	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
% total revenue	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%
Revenue from Tier 3 Users	\$998,572	\$1,527,816	\$2,337,558	\$3,576,464	\$5,471,989	\$8,372,144	\$12,809,380	\$19,598,352	\$29,985,478	\$45,877,781
% growth	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
% total revenue	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%
Number of Users										
# Users (Tier 1 - free)	173,863	260,795	391,193	586,789	880,184	1,320,276	1,980,414	2,970,620	4,455,930	6,683,896
% growth YoY	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
# Users (Tier 2 - individual)	34,773	52,159	78,239	117,358	176,037	264,055	396,083	594,124	891,186	1,336,779
% conversion rate of free to paying	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Subscription price per user (Tier 2)	\$24	\$24	\$25	\$25	\$26	\$26	\$27	\$27	\$28	\$29
price increase YoY	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
# Users (Tier 3 - premium individual / institution)	8,693	13,040	19,560	29,339	44,009	66,014	99,021	148,531	222,797	334,195
% conversion rate of free to paying	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Subscription price per user (Tier 3)	\$115	\$117	\$120	\$122	\$124	\$127	\$129	\$132	\$135	\$137
price increase YoY	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Ad Revenue										
View per day per user	1	1	1	1	1	1	1	1	1	1
Total page views per day (thousands)	217	326	489	733	1,100	1,650	2,476	3,713	5,570	8,355
RPM	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Costs										
Total COGS	\$ 1,350	\$ 1,425	\$ 1,537	\$ 1,706	\$ 1,959	\$ 2,339	\$ 2,908	\$ 3,762	\$ 5,043	\$ 6,965
Database Maintenance	\$ 149.96	\$ 224.94	\$ 337.40	\$ 506.11	\$ 759.16	\$ 1,138.74	\$ 1,708.11	\$ 2,562.16	\$ 3,843.24	\$ 5,764.86
Storage per 1000 users (GB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total storage (GB)	108.7	163.0	244.5	366.7	550.1	825.2	1237.8	1856.6	2785.0	4177.4
Storage rate (per GB/month)	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12
Information Extraction	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Twitter (\$100/month)	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Reddit (free)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Yahoo News (free)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gross Profit	\$1,907,679	\$2,917,010	\$4,460,099	\$6,819,242	\$10,426,060	\$15,940,484	\$24,371,539	\$37,262,035	\$56,970,966	\$87,105,339
Profits										
Operating Costs	\$2,528,558	\$3,632,906	\$5,222,321	\$7,511,275	\$10,809,791	\$15,566,387	\$22,430,490	\$32,343,280	\$46,670,011	\$67,392,989
Sales and Marketing Cost	\$2,242,204	\$3,195,141	\$4,553,075	\$6,488,132	\$9,245,588	\$13,174,964	\$18,774,323	\$26,753,410	\$38,123,610	\$54,326,144
Net New Customers	57,954	86,932	130,398	195,596	293,395	440,092	660,138	990,207	1,485,310	2,227,965
Customer Acquisition Cost (per user)	\$39	\$37	\$35	\$33	\$32	\$30	\$28	\$27	\$26	\$24
General and Administrative (10% revenue)	5%	\$95,451	\$145,922	\$223,082	\$341,047	\$521,401	\$797,141	\$1,218,722	\$1,863,290	\$2,848,800
Research and Development (20% revenue)	10%	\$190,903	\$291,844	\$446,164	\$682,095	\$1,042,802	\$1,594,282	\$2,437,445	\$3,726,580	\$5,697,601
Operating Profit	-\$620,879	-\$715,896	-\$762,222	-\$692,032	-\$383,731	\$374,097	\$1,941,049	\$4,918,755	\$10,300,955	\$19,712,350

IP

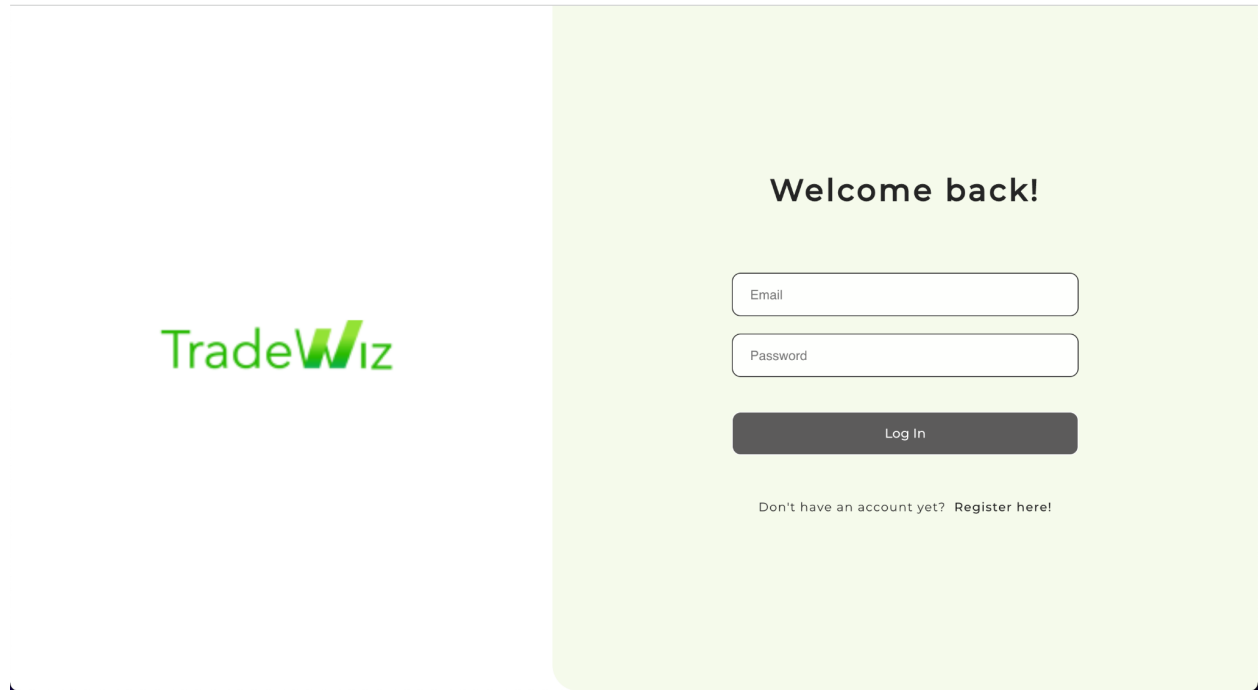
- Proprietary scraping algorithm
- Proprietary recommendation algorithm

ADDENDUM

Technical Setup

- Frontend: React, Parcel
- Backend: Flask, Vader, DynamoDB, Amazon S3
- Pre-trained sentiment analysis model: Flair (with NLP TextClassifier modules available for our tuning and model selection)
- Twitter scraping: Tweepy module (a Python library for accessing the Twitter API, used for scraping tweets)
- Reddit scraping: PRAW (Python Reddit API wrapper)

Website Screenshots



Never miss a big stock movement

Everything you need for sentiment analysis

Enter stock symbol (AAPL, MSFT)

The Biggest Sentiment Movers

#	Company	1-Week Sentiment Score	1-Month Sentiment Score	Δ in Sentiment by Week	Weekly Activity
1	AI	23.38	28.93	133% ▲	59841700
2	DIS	20.34	10.48	130% ▲	5511000
3	SPY	15.42	14.52	125% ▲	1132400
4	GME	10.84	29.49	121% ▲	1030300
5	AMC	9.83	26.63	120% ▲	8327500
6	MULN	9.18	20.43	119% ▲	397800
7	LYFT	8.48	17.61	118% ▲	34800
8	MMAT	3.92	12.21	114% ▲	322500
9	GOOGL	4.06	2.96	-7% ▼ from 11.31	2709900
10	AAPL	2.34	-10.2	-6% ▼ from 8.25	8088800

Rows per page 10 1-10 of 18

News Aggregation

Twitter

RT @dggoldst

Interested in a PhD in #CompSci, #Econ, #Marketing, or related fields? Dive into the research world at #Microsoft Research...

April 07, 2023 at 11:59 PM

RT @tomvideo2brain

Microsoft Certified Azure Virtual Desktop Specialty (AZ-140) All scripts (PowerShell, Terraform, etc.) compactly summ...

April 07, 2023 at 11:58 PM

Microsoft locks down game emulation on the Xbox Series X and Series S
<https://t.co/accOXVnS8I>
 #Microsoft

Reddit

NVDA in Shambles

Similar to tech stocks such as AAPL, MSFT, etc., NVDA is also reaching its long-awaited resistance zone around \$277 - \$280 and the last time this occurred was in November of 2021 be...

April 08, 2023 at 07:10 PM

MSFT is back. And He is King.

You've been thinking it. I'm going to say it: MSFT is back. And he is King. [MSFT so sexy]

April 06, 2023 at 09:47 PM

Trading Themes for Q4

Bearish: OPEC cuts + China reopening + summer demand. This is inflationary and will impact all inflation inputs with the greatest impact being on the more volatile food...

TradeWiz Features Pricing Community Support Enter Stock Symbol (AAPL, MSFT) Hello, acelynchoi

Alphabet Inc Class A (#googl)

This is summary of the activity regarding Alphabet Inc Class A past week in Twitter and Reddit. Sentiment score ranges from -1 to 1, where -1 means negative and 1 positive. Activity indicates the number of tweets/posts on these platforms.

Total Sentiment Score	Total Activity	Last Price
-0.774466	247.9	107.4300
Twitter Score -1.1	Twitter Activity -1.1	Price Momentum 2.7900
Reddit Score -0.448933	Reddit Activity 249	Price Change % 2.6663%
		Trade Volume 24775452

Visuals for Week of Sat Apr 01 2023 ~ Thu Apr 06 2023

WordCloud

Alphabet Inc Class A (GOOGL) ♥

Alphabet Inc. is an American multinational conglomerate headquartered in Mountain View, California. It was created through a restructuring of Google on October 2, 2015, and became the parent company of Google and several former Google subsidiaries. The two co-founders of Google remained as controlling shareholders, board members, and employees at Alphabet. Alphabet is the world's fourth-largest technology company by revenue and one of the world's most valuable companies.

Summary

This is summary of the activity regarding Alphabet Inc Class A past week in Twitter and Reddit. Sentiment score ranges from -1 to 1, where -1 means negative and 1 positive. Activity indicates the number of tweets/posts on these platforms.

Total Sentiment Score	Total Activity	Last Price
Loading...	Loading...	107.4300
Twitter Score Loading...	Twitter Activity Loading...	Price Momentum 2.7900
Reddit Score Loading...	Reddit Activity Loading...	Price Change % 2.6663%
		Trade Volume 24775452