**Final Report**

MIS3200 SP24

April 19, 2024

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# Executive Summary - Ashley & Zach

Well-written executive summary (1-3 pages; ~10% of paper length)

Introduction -

Our product AutoProphet is a financial analysis tool that allows users/investors to create a portfolio and to fulfill all of their needs while investing. Having features similar to news pages to understand what is going on in the world within the media. A learn page to allow new and adept users to understand key terms and how to invest within the market and the changes that are being made. AutoProphet also has tools for real-time data and reports for every company that shows financial statements and ratios. Lastly also provides information to users and allows pages to answer frequently asked questions. Our software will allow users and investors to gather all of their investment information and make decisions right within ours.

Opportunity and Opportunity Domain - Trent

When looking at financial tools in the market the majority of them have the necessities for an adept investor but lack the functionality required to help novice investors get into the scene. This is the main problem that we aim to address by catering to both adept and novice investors. There has been a recent burst of new investors getting into the scene and being able to provide them with the right information to get them started will bring new users to our product. Being able to specialize in this niche for new investors will show that our product is a competitor in the financial market.

The way that we will be able to cater to novice users will primarily be step-by-step guidance through the website and a special Education/Learn page for novice users to have tutorials and short lectures to teach about the important financial and investing must-knows. With all the features that we will offer for novice users, there will be a large point to also cater to more advanced users as we aim to create a platform for users of all skill levels.

Solutions

The evaluation of solutions in the financial industry is crucial to understanding market competitiveness and user satisfaction. Key factors including the mobile app, website, cryptocurrency trading capabilities, retirement planning assistance, risk analysis feature, and education system were identified for a fair comparison.

AutoProphet has many competing solutions such as Robinhood, Fidelity, Acorns, and Crypto.com all offer unique features. Autoprophet excels in the education system and risk analysis but lacks in cryptocurrency trading as a mobile application. While Autoprophet focuses on the education system and risk management

Financial Analysis

Amongst AutoProphet and compared to other financial applications out there, creating your own software can vary in cost. Development costs (factor in how long it would take to have a product-ready product) Are estimated at 2,260 - 2,706 labor hours and an estimated cost of $113,009 - $135,277. Given this information, prices vary as per experience, the work ethic of your employees, and the time frame of the given software development. In-house price ranges are usually within a salary range at $116,000. But you can also hire freelancers or outsource and this ranges from $13.00 an hour to $60.00 an hour and sometimes more. In order to figure out these costs we went through a series of questions that led us in the right direction to gain a better understanding of price and how much we would need to operate. These questions were found and answered on a website called appdevelopmentcost.com which helped us tremendously in understanding and identifying costs.

Management

Management within our organization was structured within a couple of teams that had people with certain expertise. Our skill set within our smaller groups included expertise like Customer Discovery/Testing, Interviewing, user stories, UI/UX, Data Collection/Cleaning, Programming, and Finance/Accounting. We decided to move away from the silo groups as they are built upon groups not being able to communicate as often and be productive within cross-team collaboration. We decided that going with a scrum approach for management was a better practice so we could include and encourage cross-team communication. Furthermore, we were allowed to operate in 2-week sprints. This methodology allowed us to have a smaller focused goal on top of being able to look at the project as a whole. We also conducted meetings with team members to communicate where our teams were and to keep all of our features and tasks on track. Lastly, having retrospective meetings and allowing teams to sit back and notice what we are currently doing and if we are missing anything within our development.

## Introduction

i. A brief introduction to the problem and problem domain

This project aims to provide extensive educational, analytical, and investment tools in a user-friendly interface to guide investors through the online investing and trading process. Our platform works to minimize the potential for losses while optimizing returns for investors from all backgrounds. The educational and risk analysis portions work together to provide investors with information to create their own risk management strategies. Historical price, volume, and SEC data is accessible in the platform to analyze the current and past performance of stocks to predict future behavior.

## AutoProphet

ii. A brief description of the product

AutoProphet is a comprehensive financial analysis and investment tool designed to meet the diverse needs of investors. Unlike other investment tools that often lack functionality and fail to provide a user-friendly platform, our product aims to address these shortcomings effectively.

The project's ultimate goal is to amalgamate the strengths found across various platforms on the internet. This includes features such as beginner-friendly investment tutorials, access to comprehensive company financial ratios and information, industry and company-specific news updates, and a robust platform for stock investment. These features set us apart from our competitors, as they are typically not integrated into their products.

Our platform serves as a one-stop solution, providing users with access to a plethora of tools to make well-informed investment decisions. We recognize the importance of attracting users and investors with varying levels of experience. Thus, we prioritize simplicity and accessibility to cater to novices while ensuring advanced functionalities to support seasoned investors. By covering a broad spectrum of user needs, we aim to establish ourselves as a preferred choice in the market.

## Competition

iii. An introduction to existing competitors and why your solution will gain traction in the market - Henry (SEC)

In the crowded and dynamic landscape of online investing platforms, our app encounters formidable competitors ranging from established brokerage giants like Robinhood and ETRADE to renowned financial information platforms such as Yahoo Finance and Seeking Alpha. Robinhood and ETRADE have built massive user bases by offering commission-free trading, user-friendly interfaces, and access to a wide range of investment products. Similarly, platforms like Yahoo Finance and Seeking Alpha have garnered popularity among investors by providing comprehensive financial data, analysis, and market news. While these platforms cater to different aspects of investing, they all serve as significant players in the industry, offering valuable resources and tools to investors of various experience levels. However, despite their strengths, these competitors often lack a holistic approach, with brokerage platforms focusing primarily on trade execution and financial information platforms prioritizing data dissemination without comprehensive educational support or risk analysis tools.

Furthermore, the landscape is not limited to brokerage and financial information platforms; other players, including robo-advisors like Betterment and Wealthfront, offer automated investment management services, appealing to investors seeking hands-off portfolio management. These robo-advisors typically provide diversified investment portfolios based on users' risk tolerance and financial goals, eliminating the need for active trading. While they offer convenience and simplicity, they may not provide the same level of control or educational resources as our app aims to deliver. Thus, while the competition is diverse and intense, it underscores the importance of a solution that seamlessly integrates trading functionalities, comprehensive educational resources, and advanced risk analysis tools to empower investors of all levels.

Our product exists to capitalize on the untapped audience of beginning investors, while simultaneously fulfilling the needs of the pre-established investing community. Our product will gain traction in the market. Whereas the pre-established formula of investing websites is not effective at educating novice investors, our product will provide tools for a user to continuously learn about the market. Our product will also retain the necessary tools and features for advanced investing, as is standard on other trading platforms.

## Competitive Advantage

iv. An explanation about why the designed product is competitive as compared to existing products - Henry (SEC)

Our app represents a pioneering approach in the realm of online investing by seamlessly integrating the functionalities of traditional brokerage platforms with the comprehensive insights offered by financial information services. Unlike standalone financial information platforms, which predominantly focus on providing market data and analysis, our app goes a step further by enabling users to execute trades directly within the platform. This integration not only simplifies the investing process but also enhances user experience, eliminating the need for investors to navigate multiple platforms to make informed decisions.

Furthermore, our app distinguishes itself by offering an extensive educational curriculum that surpasses the rudimentary resources commonly provided by brokerage platforms. Tailored specifically for novice investors, this curriculum covers fundamental concepts in finance and trading, empowering users to develop a solid understanding of the intricacies of the financial markets. By prioritizing education, our platform equips users with the knowledge and skills necessary to navigate the complexities of investing confidently. Additionally, our app integrates advanced risk analysis tools, providing users with valuable insights into potential risks associated with their investment decisions. Among these tools is an AI chatbot trained to assist the user in making trading decisions. This chatbot allows users to enter questions and acquire information about the market in a digestible manner, easing the complexities of manual search. This makes investing much more approachable for beginning traders compared to other trading platforms. This comprehensive approach ensures that users have access to the necessary tools and support to make informed and strategic investment choices, thereby fostering a more empowered and confident investor community.

## Financial Analysis

v. A financial analysis of the commercial potential of the product

Our app's fusion of traditional brokerage services with comprehensive financial information fills a critical gap in the market. Unlike standalone financial information platforms, our app doesn't just provide real-time market data and analysis; it facilitates direct trades within the platform, offering users a seamless investing experience. Additionally, our robust educational curriculum surpasses basic resources found on traditional brokerage platforms, catering specifically to novice investors, enabling them to build a solid foundation in finance and trading. Moreover, the integration of advanced risk analysis tools sets our platform apart from competitors, ensuring users can assess and mitigate potential risks associated with their investments.

In assessing the commercial potential of our product, the demand for accessible yet comprehensive investing platforms is evident. As more individuals venture into online investing without extensive financial knowledge, there's a growing need for solutions that provide not only trading capabilities but also educational resources and risk management tools. With the increasing popularity of self-directed investing, particularly among younger demographics, our app is poised to capture a significant market share by offering a holistic solution that addresses these needs. By providing novice investors with the necessary tools and support to navigate the financial markets confidently, our app stands to attract a wide user base and establish itself as a leader in the online investing space.

# Opportunity and Opportunity Domain

## Opportunity Analysis

i. Describe the problem/opportunity in detail. How many people are affected by the problem (i.e., market analysis)? How could people benefit by solving the problem?

The problem we aim to address lies in the overwhelming complexity and lack of accessibility in the realm of online investing for novice users. This issue affects a significant portion of individuals, particularly those who are new to investing and lack the necessary knowledge and resources to navigate the financial markets effectively. Market analysis indicates a growing trend of individuals venturing into online investing without a solid foundation in finance or financial analysis, highlighting the need for a solution that bridges this knowledge gap. By providing a comprehensive platform tailored specifically for novice investors, we have the potential to benefit a large segment of the population seeking to participate in the financial markets but feeling intimidated by their complexity.

Solving this problem presents an opportunity to empower individuals with the tools and resources needed to make informed and deliberate investment decisions. By offering a user-friendly platform with educational resources, real-time market data, and risk analysis ratios and tools, users can gain the confidence and understanding necessary to engage in online investing successfully. Furthermore, by demystifying the complexities of the financial markets, our solution has the potential to democratize investing, making it more accessible to a wider audience. Ultimately, by addressing this opportunity, we hope to not only empower individuals to take control of their financial futures but also contribute to the broader goal of financial literacy and inclusion.

## Domain Analysis

ii. Describe the problem domain in detail. Who are the key stakeholders? What are their characteristics? How should the design of the product account for these characteristics? In what environments do they engage with the problem? How does your design fit with the environment in which it will be used?

The problem domain we're delving into revolves around the complexities of online investing and stock trading, particularly for novice users. Key stakeholders in this domain include individual investors, financial advisors, and educators. Individual investors vary widely in their characteristics, ranging from those with limited financial knowledge to others with more experience but seeking further guidance. Financial advisors typically possess expertise in investment strategies and risk management and may serve as valuable resources for novice investors. Educators play a crucial role in providing foundational knowledge and resources to empower individuals to make informed investment decisions.

The design of our product should account for these diverse characteristics by offering a user-friendly interface coupled with comprehensive educational resources. Novice users may require simplified explanations and step-by-step guidance to navigate the platform effectively, while more experienced investors may seek advanced tools for analysis and risk management. Additionally, the product should be accessible across various environments, including web browsers and mobile devices, to accommodate users' preferences and lifestyles. By ensuring a seamless user experience across different platforms and environments, our design aims to meet users' needs regardless of where they engage with the problem, ultimately enhancing accessibility and usability for all stakeholders in the domain.

# Solutions

## Solution Criteria

i. Identify important criteria by which you will compare your solution to competing solutions. Don’t overly bias the criteria in favor of your design. Be fair to all competing solutions.

The solution criteria used to evaluate the finished product should be focused on fairly comparing AutoProphet to other existing products. It is important to assess the quality of the final product, but also to determine whether the product improves a real-world problem or fills an existing gap in the market.

The important criteria which our solution will be compared to competing solutions are: Mobile App, Website, Cryptocurrency trading capabilities, Retirement Planning Assistance, Risk Analysis Feature, and Education system.

## Competing Solutions

ii. Identify competing solutions and important features of these solutions

Competing solutions to our product include Robinhood, Fidelity, Acorns and Crypto.com. Robinhood has most of the features our product has, with the exception of not having the risk analysis comparison of our product. It also has an IPO Access feature. This allows investors to trade companies before they are on the market. In addition, Robinhood has a mobile application and access to trading certain cryptocurrencies. Fidelity is similar to our product, with the addition of having retirement planning assistance features for those customers interested. In addition, Fidelity has a mobile application. Crypto.com contains transactions with a plethora of decentralized tokens, cryptocurrencies, and fiat and traditional currencies. In addition, Crypto.com has a mobile application.

## Solution Comparison

iii. Compare each of the solutions based on the criteria identified, including your own product design using a comparison diagram. iv. Describe how the solution changes processes in the problem domain and how those changes improve the problem domain for users. D.

**Comparison Matrix**

|  | **Auto Prophet**  **(Our Solution)** | Robinhood | Fidelity | Acorns | Crypto.com |
| --- | --- | --- | --- | --- | --- |
| Mobile App | **No** | Yes | Yes | Yes | Yes |
| Website | **Yes** | Yes | Yes | Yes | Yes |
| Cryptocurrency trading capabilities | **No** | Yes\*  (Limited selection) | Yes\*  (Limited selection) | No | Yes |
| Retirement Planning Assistance | **No** | Yes | Yes | Yes | No |
| Risk Analysis Feature | **Yes** | Yes\*  (Limited selection) | Yes | No | No |
| Education System | **Yes** | Yes | Yes | Yes | Yes |

Mobile App: This feature was compared because of its role in opening the availability of the tool to a larger market segment of users.

Website: This feature is the most important criteria for the platform. It allows users to access the platform on essentially any device.

Cryptocurrency trading capabilities: This feature is important because it expands the overall investment options for users and has seen a massive increase in interest in the past 4-5 years.

Retirement Planning Assistance: This feature caters to those who want to be financially prudent and plan ahead for their retirement.

Risk Analysis Feature: This feature is important because it allows for users to see how a company is in terms of the risks that are relevant to it.

Education System: This feature is important because it is important for users to be familiar with the investments they are working with and getting an idea of how they work.

# Financial Analysis

i. Assume you were to start a company around this product. Conduct a financial analysis of the proposed solution that includes:

1. A detailed breakdown of the costs to develop and support the product.

a. Development costs (e.g., labor costs and technology costs)

i. You should also figure in how long it would take to have a product-ready product.

b. Maintenance costs (e.g., labor costs and technology costs)

c. Marketing costs (e.g., labor costs)

d. Management costs (e.g., labor costs)

2. A pricing model for the solution

3. An assessment of what share of the market you are likely to gain. Be reasonable. You won’t gain 100% of the market. 6 This project is subject to change as needed

4. A breakeven analysis to identify how long it will take to recuperate development costs and continued costs based on your pricing model and production-ready timeline.

In conducting a comprehensive financial analysis, our team has undertaken the task of estimating the expenses involved in developing the Auto Prophet stock investment application.

Leveraging a user-friendly online tool provided by appdevelopmentcost.com, we meticulously assessed various factors influencing the development costs. This tool facilitated our analysis through a structured questionnaire comprising 21 questions. These questions spanned critical aspects such as software platforms, application security, data storage, utility features, team dynamics, and application quality, among others.

Each question presented a range of response options tailored to mirror the specific requirements and functionalities of Auto Prophet. Our selections were made based on a careful consideration of the application's unique needs and desired outcomes. Subsequently, the tool computed an estimated total expense range reflective of the development scope envisioned for Auto Prophet.

Outlined below are the key questions utilized in our assessment, along with the corresponding responses chosen to customize the development of Auto Prophet:

* Questions:
  + 1) Which platforms will you use for your app?
    - Web App
    - Running Total Min - $13,536
    - Running Total Max - $16,197
  + 2) Do you need an icon for your app?
    - Yes
    - Running Total Min - $​​14,100
    - Running Total Max - $16,872
  + 3) How do you wish to secure your app?
    - Data Encryption
    - Running Total Min - $15,792
    - Running Total Max - $18,897
  + 4) Which option would you like to store your application data?
    - Cloud Database
    - Running Total Min - $18,894
    - Running Total Max - $22,608
  + 5) Select all of the login features that you need in your app.
    - Email user login
    - Running Total Min - $24,534
    - Running Total Max - $29,357
  + 6) Select all of the media features that you need in your app
    - Audio Playback, Video Playback
    - Running Total Min - $31,302
    - Running Total Max - $38,071
  + 7) Select all of the utility features that you need in your app
    - User profiles, Search Bar
    - Running Total Min - $40,044
    - Running Total Max - $48,531
  + 8) Select all of the ux features that you need in your app
    - Push notifications, Activity feed
    - Running Total Min - $50,196
    - Running Total Max - $60,884
  + 9) Select all of the general features that you need in your app
    - Ads
    - Running Total Min - $55,131
    - Running Total Max - $66,789
  + 10) Select the amount of third-party services that your app will include
    - 3
    - Running Total Min - $80,511
    - Running Total Max - $98,312
  + 11) Select any additional feature that you need to include
    - 2-Factor Authentication
    - Running Total Min - $86,856
    - Running Total Max - $106,192
  + 12) Do you need a tablet version for your app?
    - No
    - Running Total Min - $86,856
    - Running Total Max - $106,192
  + 13) What level of design are you planning to have in your app?
    - Custom
    - Running Total Min - $96,096
    - Running Total Max - $115,432
  + 14) How many screens will your app have?
    - 10 to 25
    - Running Total Min - $92,893
    - Running Total Max - $111,638
  + 15) On average, how many users will use your app?
    - 1,000 - 10,000
    - Running Total Min - $89,690
    - Running Total Max - $107,843
  + 16) How much time can you be available for the development team? Weekly meetings, sprint review, etc
    - 4 hours every week
    - Running Total Min - $89,690
    - Running Total Max - $107,843
  + 17) How much experience do you have building mobile apps?
    - I have never been involved in this process before.
    - Running Total Min - $107,628
    - Running Total Max - $129,412
  + 18) What's the state of your mobile app?
    - I have a solid idea of what I want to build but I need to define some specific features
    - Running Total Min - $125,565
    - Running Total Max - $150,980
  + 19) What level of quality/fidelity do you need for your app?
    - Medium Quality
    - Running Total Min - $135,224
    - Running Total Max - $163,059
  + 20) How are you planning to manage your project? (Project Manager)
    - It will be managed by the internal team (Only if you are sure of your team capabilities)
    - Running Total Min - $135,224
    - Running Total Max - $163,059
  + 21) Do you have a web version of your app ready?
    - Yes
    - **Total Min - $113,009**
    - **Total Max - $135,277**

Following the completion of the development cost demonstration, our team received a comprehensive summary encapsulating the outcomes derived from the questionnaire responses. The summary provided detailed insights into the projected resources required for the development of our stock investment software application.

According to the summary, the estimated time investment for the development process spans from a minimum of 2,260 hours to a maximum of 2,706 hours. Concurrently, the anticipated financial outlay is projected to fall within a range of $113,009 (minimum) to $135,277 (maximum) to realize the construction of our application. These figures serve as crucial benchmarks for our budgeting and resource allocation considerations as we progress further into the implementation phase of our project.

Furthermore, in our endeavor to plan for the various contingencies associated with the development process, our team has conducted a comprehensive breakdown of employee compensation. While the exact number of employees for this nascent venture remains undetermined, we have gathered pertinent information regarding the anticipated salaries for potential team members.

Considering the prevailing market conditions, particularly in North America, where our operations are expected to primarily unfold, the average hourly rate for App Development team members is approximately $60. This rate serves as a foundational benchmark for our compensation structure.

Exploring various staffing options, we have delineated the following salary expectations:

1. **In-house Developers:** Opting for an in-house development team entails significant investment, with the average annual salary for an app developer in the US hovering around $116,554.
2. **Freelancers:** Alternatively, engaging freelance developers presents a potentially more cost-effective solution, especially for smaller projects or specialized expertise requirements. According to data from Upwork, the average hourly rate for freelance app developers ranges from $13 to $60.

These salary projections enable us to formulate a compensation strategy tailored to the needs and dynamics of our startup venture. Such considerations are integral to ensuring the attraction and retention of top talent essential for the successful execution of our stock investment software application project.

## **Conclusion**

ii. Based on your analysis, describe whether the product is worthy of investment.

Based on the financial analysis conducted, AutoProphet appears to be a promising investment opportunity. Here are some key points supporting this conclusion:

**Market Potential**: The market analysis indicates a growing trend of individuals venturing into online investing without a solid foundation in finance. AutoProphet addresses this need by offering comprehensive financial analysis tools and educational resources tailored for novice investors. With an increasing number of people interested in self-directed investing, especially among younger demographics, there is a substantial market for a platform like AutoProphet.

**Competitive Advantage:** AutoProphet's unique selling proposition lies in its seamless integration of traditional brokerage services with comprehensive financial insights and educational content. This approach sets it apart from competitors by providing a one-stop solution for investors, combining trade execution capabilities with a risk analysis tool and educational resources.

**Revenue Potential**: The pricing model, whether subscription-based, freemium, or transaction-based, can generate revenue streams from a diverse user base. With a well-thought-out marketing strategy and targeted user acquisition efforts, AutoProphet can attract a significant number of users and convert them into paying customers.

**Break-Even Analysis:** While the initial development and ongoing maintenance costs are substantial, the break-even analysis can provide insights into the timeline for recovering these costs and achieving profitability. Factors such as user growth, retention rates, and average revenue per user will influence the breakeven point.

**Future Growth**: As the platform gains traction and establishes itself as a trusted resource for investors, there is potential for scalability and expansion into new markets or additional features. Partnerships with financial institutions or integration with other financial services could further enhance AutoProphet's value proposition.

Overall, considering the market demand, competitive advantage, revenue potential, and strategic growth opportunities, AutoProphet appears to be a worthy investment for stakeholders looking to enter the financial technology space and capitalize on the growing trend of online investing. However, thorough due diligence, market validation, and ongoing monitoring of key performance indicators (KPIs) will be essential to ensure the success and sustainability of the investment.

# Management

## Management Practices

i. Describe the management practices that you used throughout the semester.

Our project’s management approach involved two key areas:

1. **Scrum Framework**

This agile development methodology allowed us to manage the project effectively. We used the following practices:

* Sprint Cycles
  + 2-week cycles with pre-identified goals, and a deliverable at the end of each sprint cycle.
* Sprint Planning
  + Identify goals that are achievable over a period of two weeks that pertain to the overall scope of the semester-long project.
* Product Owner Meetings
  + Each team had a product owner who met with one another (including the class project manager) to discuss what their team was working on to prevent overlap and promote collaboration. These meetings were particularly helpful in maintaining cohesion across the entire project.
* Sprint Retrospectives
  + Project managers discussed what was worked on as a class and what we can improve upon for the next sprint cycle. PMs also described what went well over the course of the sprint.

1. **Skill/Knowledge-Based Teams**

We opted to strategically divide the group into teams based on individual skills and strengths. Based on each team’s goal, individuals were assigned to have a variety of skills in each group that needed them. This leveraged individual strengths and experience to create a better product. Skills we organized include:

* Customer Discovery/Testing
  + Interviewing, user stories
* UI/UX
* Data Collection/Cleaning
* Programming
* Finance/Accounting

## Recommended Practices

ii. Describe what worked well.

The Scrum Framework and Skill/Knowledge-based teams were effective management practices that our class used throughout the semester that are recommended. The Scrum Framework included sprint cycles, sprint planning, product owner meetings, and sprint retrospectives. The Skill/knowledge-based teams helped in defining the scope of the project to be effective in outlining what each team had to do. This included the division of the educational, risk analysis, historical price, volume, and SEC groups. The teams generally had a clear understanding of what their tasks were. In addition, defining the strengths and weaknesses of each member of the class made it clear and apparent who could contribute to what team effectively. Domain Analysis is another practice that is recommended. This includes defining who the key stakeholders are, characteristics, design, and how it applies to our specific environment.

## Changes Over the Course

iii. Describe changes you made to practices throughout the semester.

Throughout the semester, we implemented iterative changes to our practices to emphasize communication and teamwork within an agile framework. As the course progressed, the evolving needs of the product became apparent. Initially, inter-team communication posed a challenge, particularly when decisions required input from multiple teams. In response, we established an additional communication channel comprising HTML domain experts from each cross-functional team.

This adjustment facilitated more seamless collaboration and helped ensure decisions were informed by the expertise of relevant stakeholders across teams. By incorporating input from HTML domain experts, we enhanced the quality of decision-making and fostered a more cohesive approach to problem-solving within our agile environment.

## Future Recommendations

iv. Describe what you would have kept the same or done differently if you were to continue to develop the system.

Initially, we recommend defining the strengths and weaknesses of each member of the class. Our class did this, and it was very beneficial in understanding who can do what and who struggles with certain aspects of the projects. We split our categories into UI/UX, data collection/cleaning, programming, finance/accounting, and customer discovery/testing, then everybody went and filled out which part they felt the most comfortable and skilled in. When we then split into small groups, knowing everybody's skill set was very beneficial, as this helped create diverse groups. We had expertise in all of the topics that we felt were necessary for each group to focus on and complete their specific task.

Another aspect of our project that was beneficial to our development through the project was the way we defined our different groups. Each group was defined by what we as a class were most important to include on the website. We decided on creating the groups as price/volume data, SEC data, risk analysis, financial education, and system/website education. These groups are what we, as a class, felt were important to include when looking at a website regarding financial information.

It is also very important to choose a product manager who is a good leader and is able to communicate with each group efficiently. Our leader had previous knowledge and experience within the scope of the project, which helped with getting everyone started. This made creating and deciding on topics for our groups very easy. Our project manager was also integral in creating a platform for everyone to communicate and giving weekly updates on where the project is at and our future intentions with the project. We used Discord as our chosen method of communication and it worked great. We were able to create branches for each section, all while having a general section and sections for each deliverable.

More frequent product owner meetings would be beneficial. There were times that we struggled with communication between teams, and we believe that weekly meetings with product owners would help. There was an overlap of work without people knowing, which caused multiple teams to work on the same task, but separately. A lot of cross-team collaboration could have occurred, but instead, we wasted time attempting to do it separately.

Another recommendation would be to have overall class meetings at the start and end of each sprint. We typically had our project leader state what occurred in the last deliverable and what we needed by the next deliverable, but we did not have each group directly update the class. This would have been beneficial to create unity within the project and keep everyone working in the same direction. We struggled with each group working on the same thing because we did not openly communicate our goals and what each group directly planned on doing.