

Design Thinking Project Report

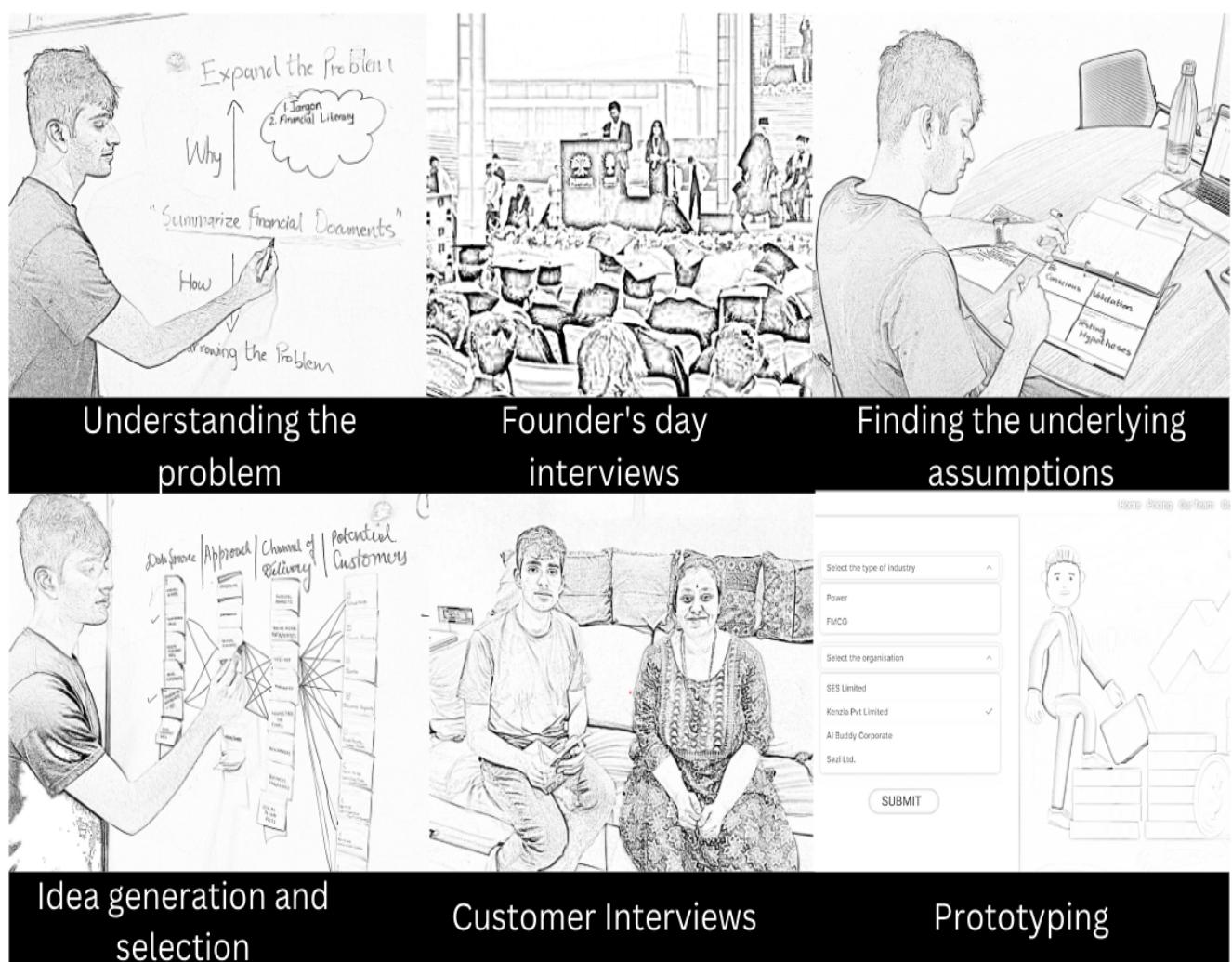


Fig: Customer journey map for the design thinking course

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Abstract

Investment is a major driver of economy as well as the most reliable source of steady income for the future in developing nations like India. However, according to data from the National stock exchange (NSE), there are 1.2 crore active investors in India, a country of 138 crore people as of August 2021 which is less than 1% of the total population. One major factor that keeps Indians away from investing in stock markets is the lack of knowledge about it. A lot of people have this assumption that stock market is something that is hard to crack. That thought could be rooted from the basic fact that nobody has ever tried to make them understand what the stock market is and how investing in it works. A major contributing factor behind this is the length of financial documents and the use of complicated terminologies and jargons that seem alien to a layman investor. With this premise in mind, we try to take the design thinking approach to summarize financial documents to make investment easy and accessible to all potential investors.

Understanding the Problem

The first class on ‘Understanding the Problem’ was an eye opener for us as we were coming into the course with already a solution in our minds regarding what we wished to develop. However, this flawed method was soon put to rest, and we decided to look at our problem more deeply from different perspectives before thinking about the solution. The first step on this path was ‘**The 5 Why’s Approach**’ which helped us to get to the root of the problem.

The 5 Why Approach

The following are the highlights of our discussion from the 5 Why Approach:

- We realised that our problem is valid because financial documents like annual reports and IPO documents are lengthy texts with a lot of details and contain jargons that all the investors don’t have the time to read thoroughly and comprehend before investing.
- We realised that this was an issue because financial documents are meant to be source of information for not just casual investors but for other stakeholders like financial analysts, media, shareholders, mutual funds, government agencies, etc. The documents are supposed to cater to plethora of stakeholders and thus there is a need to provide a lot of information in as concise a manner as possible. Thus, the documents contain jargons to avoid unnecessary elaboration of widely understood financial terminologies.

- Steering our thought process in another direction we questioned more fundamentally about our problem to understand why this is an issue at all and does it need a solution. We came to a realisation that in today's fast-moving world, where people need a quick and easy solution to their problems, a concise document for financial analysis could be a key factor in promoting investments in equity markets on a large scale. To take an analogy, people who find reading newspapers boring and tedious, try to keep themselves informed by reading short news articles on platforms like InShorts or through social media websites like Twitter.
- Finally, we concluded that if we are able to summarise the long and laborious financial documents in a concise and meaningful manner that is comprehensible to a layman investor, it could be helpful in making smart and informed investment decisions and eventually result in turning investment into a habit rather than a job that is left to the experts.

ASK 5x WHY

Project: [REDACTED]
Team: [REDACTED]
Version & Date: [REDACTED]

Quick guide: With the 5x Why question a problem should be understood in depth and not only scratched on the surface. The principle is very simple: You ask, for example, like a toddler, again and again "Why". Repeated questions help to identify hidden problems that would not emerge from a one-off questioning. First describe the problem as detailed as possible (e.g. Why is it a problem?) and if possible visualize it with photos or sketches. Then, with the second "Why" question, carry out a kind of cause analysis and then ask again "Why". Each answer is to be followed by a question with why. Don't stop until it really doesn't make sense anymore. Through the deep digging new, surprising insights can be gained. "Why?" should be asked even if the apparent answer is already known.

1 <i>e.g. problem description</i>	Why is the problem a problem? What is the Problem? Why is it a problem? What are the symptoms of the problem? Because the financial documents are lengthy & contain a lot of jargons for layman investors.
2 <i>e.g. direct impact</i>	Why? What's the reason? What's the cause? Why does the problem occur? Which technology is used? Because layman investors do not have the means to easily understand the jargons used in the financial documents which refers to a wide range of stakeholders.
3 <i>e.g. cause - effect</i>	Why? What could be another cause for the problem? Because the layman investors may not have the required financial literacy to understand the jargons.
4 <i>e.g. organizational hurdles</i>	Why? How could the problem be avoided? By enabling the users to access the same information in a succinct, lucid, and easily understandable language.
5 <i>e.g. system hurdles</i>	Why? What systematic approach could prevent the appearance? Extract key parameters which capture the everything essential to make informed decisions for smart investment decisions.

THE DESIGN THINKING TOOLBOX .. PREMIUM TEMPLATE WWW.DT-TOOLBOOK.COM/SHOP

Pic: Ask 5xWHY

The 5 WH Questions Exercise

While the 5 why exercise helped us get to the root of our problem and why a solution is worth the effort and time, the 5WH questions was another interesting exercise that we undertook alongside the previous one. This exercise helped us identify all the potential stakeholders in the problem that we are trying to address, and the different kinds of questions stimulated our minds to look at the problem from the perspectives of those stakeholders which eventually helped us gain new insights and define our final problem statement precisely. The following are the highlights of the 5WH questions exercise which lasted for about 30 mins:

- **Who?** – These questions helped us identify not only potential customers but all the other stakeholders in the solution that we were working towards. The companies who publish these documents and government agencies like SEBI and RBI that set the guidelines for these documents and regulate their content are the major stakeholders that we rely upon for information. Apart from layman investors who would like to have more information on the company's work, its investments, and future plans before investing, another potential customer that we identified in the course of this exercise was financial analysts working in big/small companies, mutual fund managers who have to go through all these documents before taking decisions. A cursory glance at a summarised document could be useful tool in their arsenal.
- **What?** – Prompted us look at our problem from a different mindset. We realised that not only is the length of the documents and their use of esoteric terminologies an issue, but language is also a major barrier in a multilingual country like India where most people learn to read and write in their native languages whereas the documents are published mostly in English.
- **When?** – Thinking about when the problem became a real challenge, we realised that in the past few years as economic growth has picked up pace in India and the purchasing power of people has increased. With surplus money at hand, there is natural tendency to invest but the common man lacks the necessary knowhow to make these investments.
- **Where?** – Helped us get a clearer understanding of our target users from a vague picture. We identified that people within a certain income and age bracket who do not have access to financial advisors but wish to make informed investments decisions and would like to know more about the company that they are about to invest in are our primary target.

- **Why?** – This exercise was already thoroughly conducted in the previous section where we were able to identify the root cause of the problem and the need for a solution in the space. We also identified that the reason the problem had not been solved as yet was due to the technical difficulties involved in making such a solution possible. Linguistic models which have the capability to summarise large documents into a concise and meaningful piece of text have attained the desired levels of accuracy only recently.
- **How?** – The how questions helped us think about our problem and the potential solution from a technical perspective where we pondered about the different ways in which we could make our solution available and accessible. We realised that apart from the technical offering that we intended to provide through the use of linguistic machine learning models, we also needed to identify how to make it most easy for common potential investors to get access to this solution.

Project: _____
 Team: _____
 Version & Date: _____

5WH QUESTIONS

Quick guide: The SWH questions help to gain deep insights, new insights and information and to understand the situation and the problem holistically. The WH-questions give the opportunity to learn more about the wishes and opinions of the user or a customer. The SWH questions can also be used very well for observations. In the first step, the relevant WH-questions are determined. The questions in the template help to inspire and start. The interview questions or a question map can also be derived from the WH-questions. Once the appropriate questions have been formulated, they can best be applied in several interviews with users, experts and stakeholders. The questions can of course vary and should be adapted to the situation. In general, the answers should be supported by facts.

Who?	What?	When?	Where?	Why?	How?
-Who's involved? → Stakeholders: Regulatory body organisations publishing the document	What do we already know about the problem? → language barrier exists. → Financial literacy is low in the country.	When did the problem start? → since the time people had the purchasing power to invest in market.	Where does the problem occur? → Tiers of income groups which do not have access to financial advisors.	Why is the problem important? → To make info - need decisions → To boost economic growth	How could this problem be an opportunity? → Making info easy to understand → Sustainable will create customer value which can be an unexplored business opportunity
→ Who is affected by the situation? → Layman investors who want to invest → Financial analysts	What would we like to know? → The current "we" is very time consuming → Making info available in an easy manner would	When do people like to see results? → ↑ in purchasing power)	Where has it been resolved before? → solved within the organisation but not accessible to the public	Why did it occur? → TO DO	How could it be solved? → Increase financial literacy & awareness → Technical offering using NLP
Who is the decision maker?	What are the assumptions that could be questioned? → Increase the chance for layman investors to make investment in companies	When can the project be started? - Anytime till	Where did similar situations exist? → TO DO	Why hasn't it been solved yet? → Technical feasibility challenges	How has already been tried to resolve the problem?
Who... ?	What... ?	When... ?	Where... ?	Why... ?	How... ?

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Pic: 5WH Questions

Founder's Day interviews

We conducted interviews with a couple of founders on Plaksha founders' day. The intention was to get feedback on the need for the problem. However, because of the paucity of the time and lack of preparedness in how we should talk about our problem, we talked about the solution we had in mind back then.

Since the solution was conveyed before painting a picture of the pain points we were trying to address, the feedback we received lead to the expansion of the scope of our solution which was yet to materialize. Some of the feedbacks were about the addition of certain features to add more value that were outside the scope of the problem we were trying to address. This experience brought forth the demerits of looking at a problem from a solution centric approach and acted as the motivator to get to the root of the problem by separating the solution space from the problem space.

Underlying Assumptions

The product lifecycle is agile in nature and due to the budget and time constraints, the teams tend to make some assumptions to continue to push forward. Making assumptions is an important part of the problem solving and ideation process but there is a need to validate these assumptions through user research since these assumptions play a role in decision making process. This process helps build empathy for the end users, listen carefully to what they have to say, and build products that meet their validated unmet needs rather than developing a product which serves the needs of the users according to our beliefs of what the user needs are.

Multiple assumptions were identified by making use of a matrix on a whiteboard as follows:

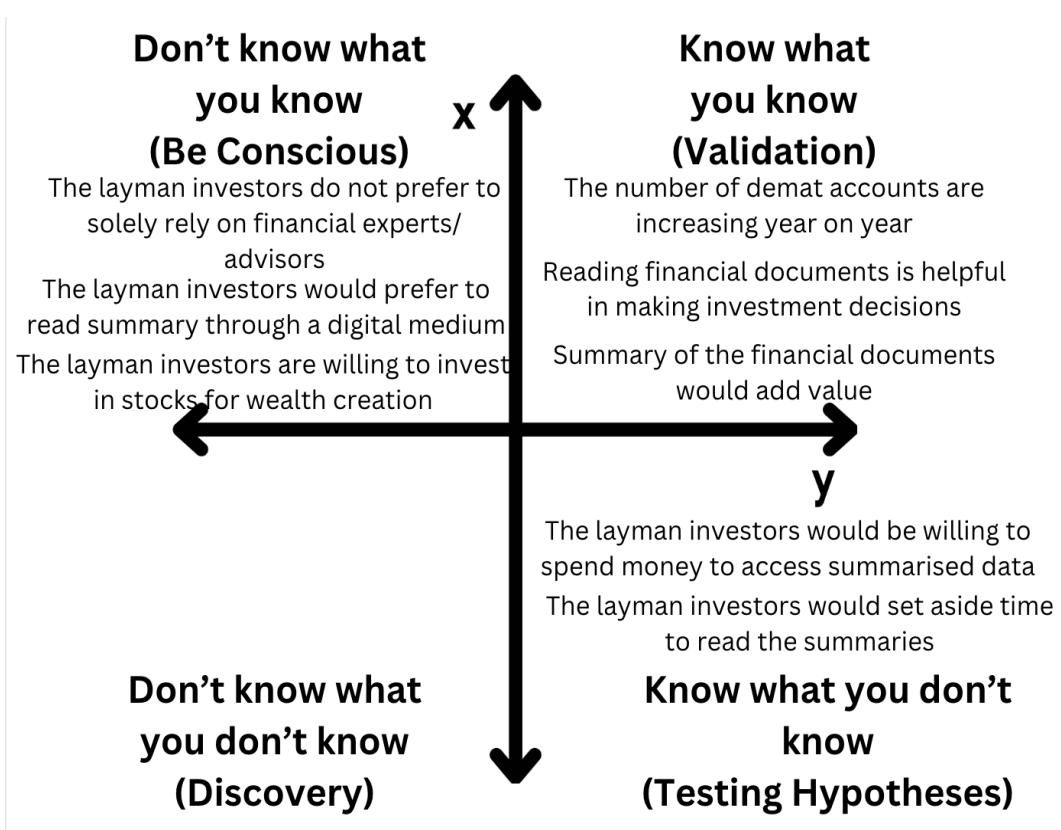


Fig: Role of user studies

After the assumptions were identified, they were ranked in the order of risk to focus our user research to find answers to pressing questions on which our problem statement was based.

This was a risk management tactic to quickly ascertain whether the problems we were trying to address are the needs of the users or not. The following three high risk assumptions were chosen to be tested through all the following stages:

- The people are interested in setting aside time and putting efforts to read through the documents
- The time of the users will be saved if they read the summary instead of the whole document
- The summary of the documents would hold relevance in making informed investment decisions

The strategy adopted for testing these assumptions is as follows:

- An effort was made to interview as many customers as possible
- The interview style followed was exploratory so that the customer's opinions and viewpoints were not influenced
- Interview consisted of a member of the team who prompted questions and another team member who took note of the insights from the conversations as a scribe
- A list of over 20 questions were prepared to help serve as the guideline during the interviews
- The questions were segmented-some of the questions were general for everyone while some others were framed for the customers with background in finance and customers who did not have the fundamental knowledge of financial jargons in order to facilitate the discussion better
- An effort was made to find patterns in the responses from the interviews to ascertain those as representative of the user segment
- The patterns identified were then leveraged to discard or accept the assumptions that were made

Idea Generation and Selection

After the problem statement was defined with a reasonable criterion, the generation of ideas was the next logical step. The goal of this step was to generate fresh ideas by letting our creativity drive our imagination. The first approach that was tried was 6-5-3 method but since our ideas were repetitive, it served no purpose.

The next approach followed for the generation of ideas was brainstorming. As a part of our strategy to brainstorm, an emphasis was placed on:

- Generating as many ideas as possible
- Writing down ideas no matter how silly they might sound
- Combining similar ideas together
- Modifying ideas to improve them to suit the problem statement better

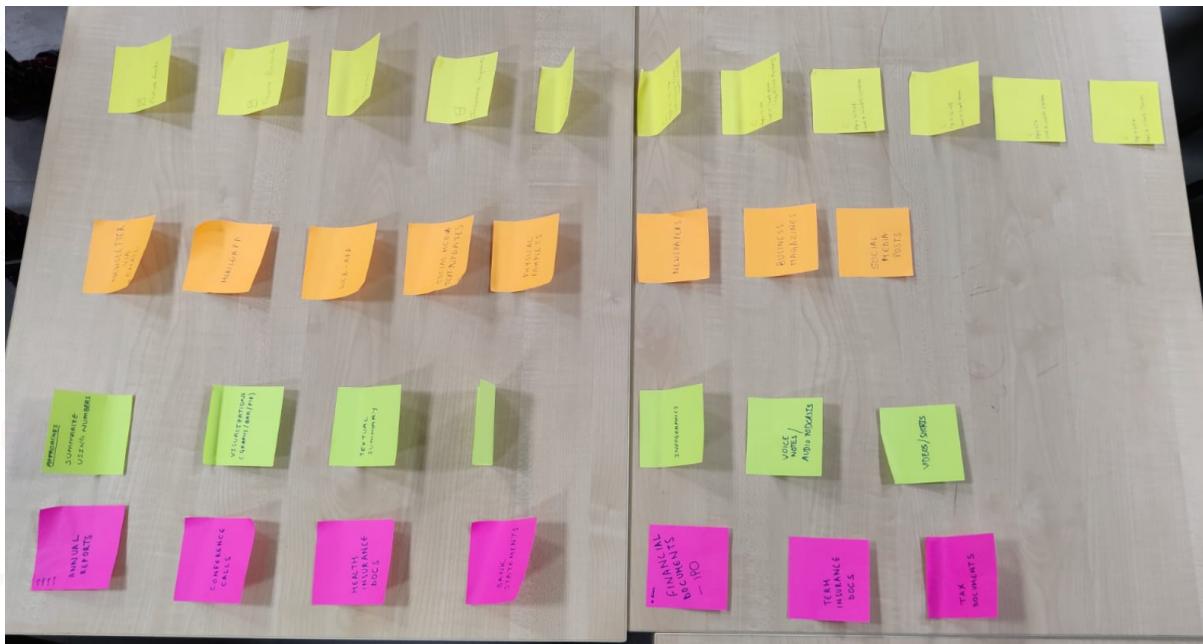


Pic: The team discussing the ideas

As the brainstorming progressed, the variants of approaching the problem were realized. We asked ourselves the following questions:

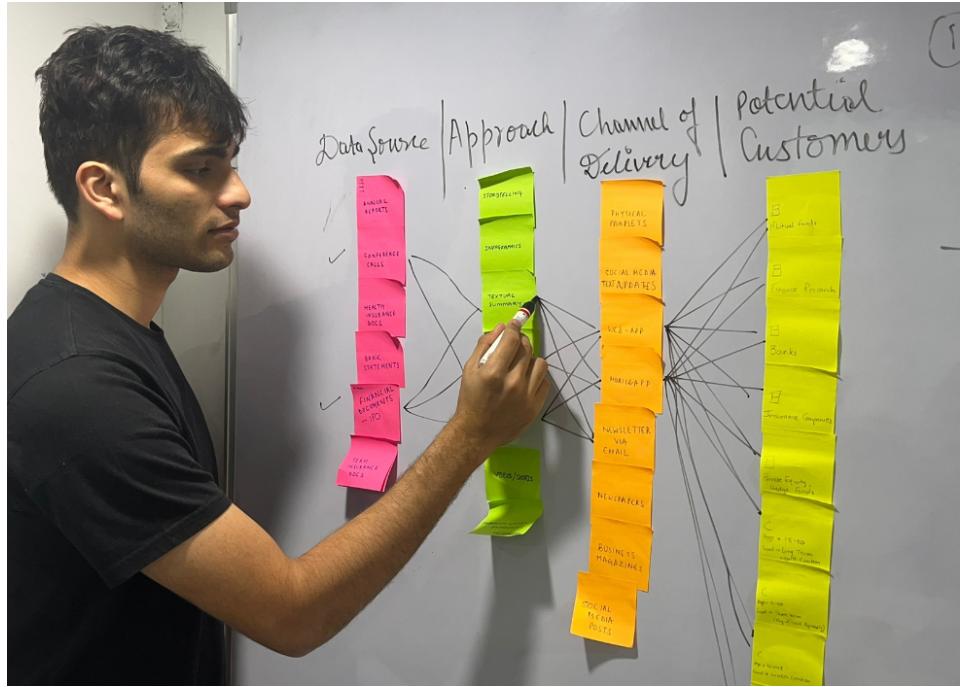
- How many possible data sources can we use to summarise content that represents financial data? (Annual reports / IPO reports / Stakeholder conference calls / Insurance documents)

- What are the different approaches in which we could summarize our solution? (Dashboards / Textual summary / Voice notes / Infographics)
 - What channel could we use to deliver our product? (Mobile application / Web application / Newsletters via email / Social Media Posts / physical pamphlets or magazines)
 - Who could potentially use our products? (Laymen investors / Equity market analysts / Mutual fund analysts)



Pic: List of the ideas under each identified category

These questions later transformed into the categories under which the ideas were listed. This enabled us to leverage problem decomposition approach. The problem was broken down into multiple facets and different ideas of each facet were listed. This was followed by creating a mesh of network by connecting the ideas from one category to another. To limit the number of connections, only the top ideas were connected as we moved from one category to another. This interconnected network of ideas gave rise to a plethora of approaches that could be used as a solution.



Pic: The interconnected network of ideas to identify viable and good approaches

The following questions were used to filter ideas as they were grouped or clustered:

1. Does the approach match with the problem statement?
2. Does the approach excite the team?
3. Is the approach out of scope in the context of the problem?

Our learnings from the using the hierarchical approach to list down the ideas are as follows:

- The convergence of the solution became easier as we incorporated structure to our random process of idea generation by listing down the categories
- Some silly ideas which could have easily been ignored paved their way into the list of shortlisted ideas
- Got a better overview of how different sets of ideas would suit better for different segments of customers

The idea generation phase was followed by a phase of structuring the ideas. Since the categories were used in the idea generation stage itself, the type of categories to be used for affinity diagram were already known. For clustering, the clusters of ideas belonging to an approach from the network were visualised in the form of a Venn diagram since there were some ideas that belonged to multiple approaches. For e.g. Web application as the channel of delivery was the chosen idea for both the annual and IPO reports. In order to make the Venn

diagram look less complex, two-layered approach was used to finally decide the ideas which will be used for the next stage of decision making. The first layer consisted of using value-effort quadrant to select the ideas that are high in delivering value, while being feasible. The ideas selected from the first layer of evaluation were further evaluated by the existence of customer segment and a similar existing product. Since the aim of the design thinking is to innovate, the two final approaches chosen are both new to the market although the customer segment for those already exists. Throughout this process, the judgement was deferred to not prevent ideas that might have been too ambitious or creative.

Once we had our final two approaches that were selected, the decision making step was undertaken by using speed critique. The team discussed the pros and cons of each of the chosen approaches in an attempt to capture the bigger picture and highlight the alignment of the solutions with our larger vision of making smart investment accessible and easier. After some deliberation, the team unanimously agreed that the best data source would be IPO reports, the best approach would be textual summary, the best channel of delivery would be a web application and the best set of potential customers would be laymen investors who are adept and interested in reading documents before making sound financial decisions.

Customer Interviews

Before selecting the right users or the right customer segment, we listed down all the potential users of our product. For the B2C segment, we categorized the users based on age and investment goals (short term or long term). For the B2B segment, we categorized the users based on the type of financial business, the company is operating in.

Different potential users of our product are as follows –

1. Business to Customer Segment – (B2C)
 - i) Users with age 18-30 and short-term investment goal.
 - ii) Users with age 30-50 and short-term investment goal.
 - iii) Users with age 50+ and short-term investment goal.
 - iv) Users with age 18-30 and long-term investment goal.
 - v) Users with age 30-50 and long-term investment goal.
 - vi) Users with age 50+ and long-term investment goal.

2. Business to Business Segments – (B2B)
 - i) Mutual Funds
 - ii) Insurance Companies
 - iii) Financial Research Companies
 - iv) Banks
 - v) Non-Banking Financial Companies (NBFCs)
 - vi) Private Equity and Hedge Funds

User Interview 1: (Business to Business Insights)

The user holds a bachelors in Finance and has cleared CFA Level 2. They work as a Financial Analyst at a Financial Research company, is 24, and are based out of Mumbai.

Insights –

- The user's work involves going through various financial reports including the annual reports and recommending investment decisions.
- Initially, the user would spend a lot of time reading the annual reports but after working for some time, the user started to know exactly where the relevant information is so the time spent was reduced.

- An important insight of analysing and summarizing the conference calls of the company was received.
- A conference call is an event in which the investors can listen and ask questions to the management of the company regarding the projected future earnings or the growth plan or strategy of the company.

User Interview 2: (Business to Business Insights)

The user holds a Bachelors in Finance and ACCA (7 levels). They work as a Financial Analyst at a financial advisory firm (private equity segment), are 21, and are based out of Mumbai.

Insights –

- The user's work involves valuation of private companies for major private equity funds and investment banks.
- The user uses annual reports to benchmark it with the financial reports of the unlisted private companies thus getting better insights in the valuation process.
- The user uses tools like Bloomberg, Capital IQ and Private Circle.
- These tools emphasize more on the quantitative data. Qualitative financial reports are also available by different financial research institutes and posted on platforms like Bloomberg but even they are long and there is irrelevant information.
- Access to these platforms is affordable at a company level but its very expensive for individual investors due to very high subscription cost.
- There can be value created in summarizing these documents for investors who do not have access to these platforms.

User Interview 3: (Business to Customer Insights)

The user holds a MBA in Finance .They work in corporate strategy role, are 35, and are based out of Mumbai.

Insights –

- For taking an investment decision in a company, the user checks the annual reports, speaks to people working in that sector to understand the industry dynamics and similar companies.

- The user believes it's important to understand the company and not directly jump into the numbers for making investment decisions.
- It takes 2-3 weeks for the user to make an informed decision to invest in a company.
- The user believes that just reading one annual report will not help to make a good investment decision. It is important to see the trends in the reports of a single company over the years.
- Regarding the conference calls, according to the user, the analysts of various financial research companies present in the calls include the insights of the calls in their research reports.
- The user believes that numbers should also be provided along with qualitative data because customers would not want to use 2 different platforms for qualitative and quantitative data of a company.

User Interview 4: (Business to Customer Insights)

The user holds an MBA in HR. They are the co-founder and CEO of an HR company, are 34, and are based out of Mumbai.

Insights –

- The finances of the house are managed by the spouse but the user believes in long term wealth creation after carefully understanding the companies.
- The user uses financial advisors or wealth management services to grow their wealth.
- User invests significant amount of money in Mutual Funds because user believes in diversifying the risk while maximising the returns.

User Interview 5: (Business to Customer Insights)

The user holds an MBA in Finance. They are working in trading and wealth management of HNIs, are 39, and are based out of Mumbai.

Insights –

- The user trades with the wealth provided by the High Net-worth individuals and helps in wealth creation.
- The user does not read financial reports. The user goes through numbers in the profit and loss statements and balance sheets with notes to accounts sometimes but mainly

uses technical analysis and analyses economic conditions of the industry and the country/world for making money.

Overview of all the user insights

- Discovered new ideas like summarizing conference calls or showing the year-on-year trend of the financials.
- The investment choices are driven by a bias or preference towards a company or a sector of their choice.
- Lack of motivation to read the annual reports because its boring and time consuming.
- The product can be a good offering to individuals (B2C) who have a goal of long-term wealth creation, who have a habit of reading and going through the documents (cautious investors) and who do not have access to investment platforms like Bloomberg due to high subscription cost.
- Talking about B2B, the product can be a good offering to small financial businesses like small wealth management firms who cannot afford investment platforms due to high subscription cost.
- Due to this we understand that our target customers have changed and the total addressable market has decreased a lot.

Things that we could have done better:

We tried to interview as many people as possible in this short course of time but we need to conduct interviews of many people in each of the 12 categories (both B2C and B2B) mentioned earlier. Interviewing more people would help us to understand the problem better and empathize with the users and identify our target customers.

Prototyping

To give the customers an idea about how the solution would look like, a digital prototype was created. In this stage:

- The questions that we wanted to be answered through prototype testing were identified
- The basic features that would help answer the questions were selected and all the good to have features were placed out of scope of this stage
- Focus was placed on the user needs to come up with a design which was easier for the users to navigate through

The questions that we wanted to be answered through our prototype are as follows:

- Does the user have the understanding of different financial documents used for summarisation?
- Which documents would the user be more interested in selecting for summarisation?
- Does the user find the flow of navigating through the web application intuitive?
- Does the user have an understanding of the sectors a company belongs to?

These questions were framed to test our assumption that the user knows what document(s) they want to read and is interested in reading the summary of the documents to make investment decisions.

A paper prototype was created initially which was later transformed into a digital prototype using Figma. The digital prototype was the chosen prototyping approach because:

- The idea is a web application and thus, a digital prototype simulated the vision of the solution better
- The customers who did the prototype testing were outside our campus and thus, sharing the link of the prototype ensured accessibility for them to test the prototype easily
- A high-fidelity prototype could be produced with low efforts which enabled gathering of authentic user performance data quickly

The user flow of the prototype is as follows:

- The user has the option to select among different kinds of reports. These include Annual Reports, IPO documents, and Others.

- After the user makes the choice of the document, they are directed to select the type of industry and the company for which they need to generate summary
- After submitting their selection, the user can view the key parameters that can help make informed investment decisions as well as the summary of the document
- The user also has the option to view the whole report

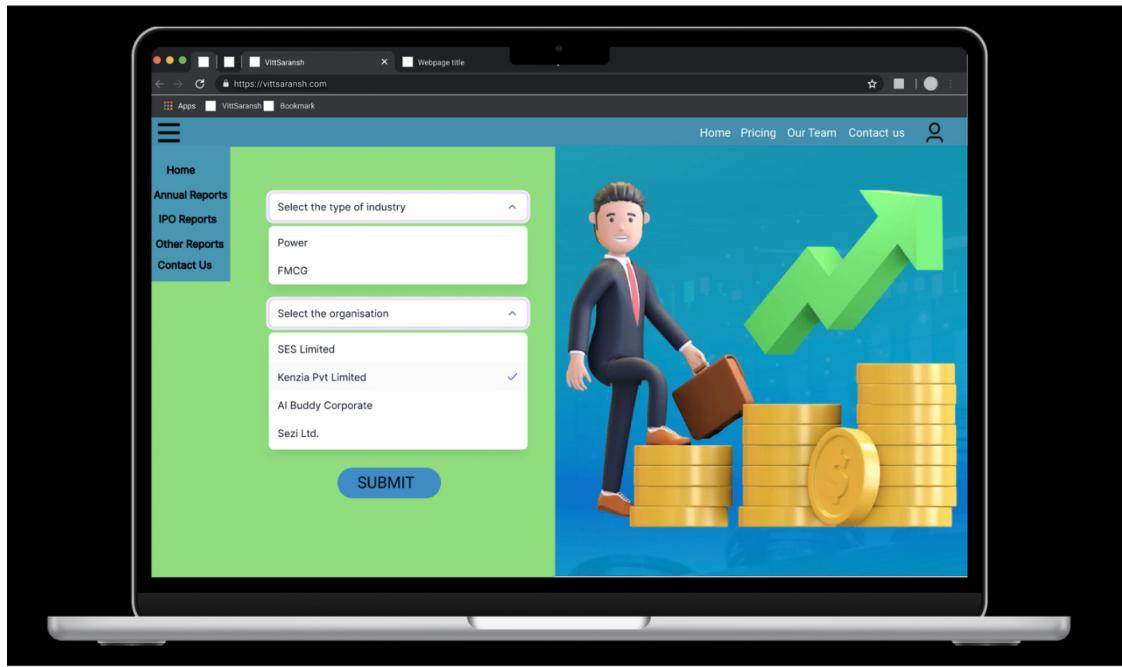


Fig: The home screen where the user makes the choice of the document

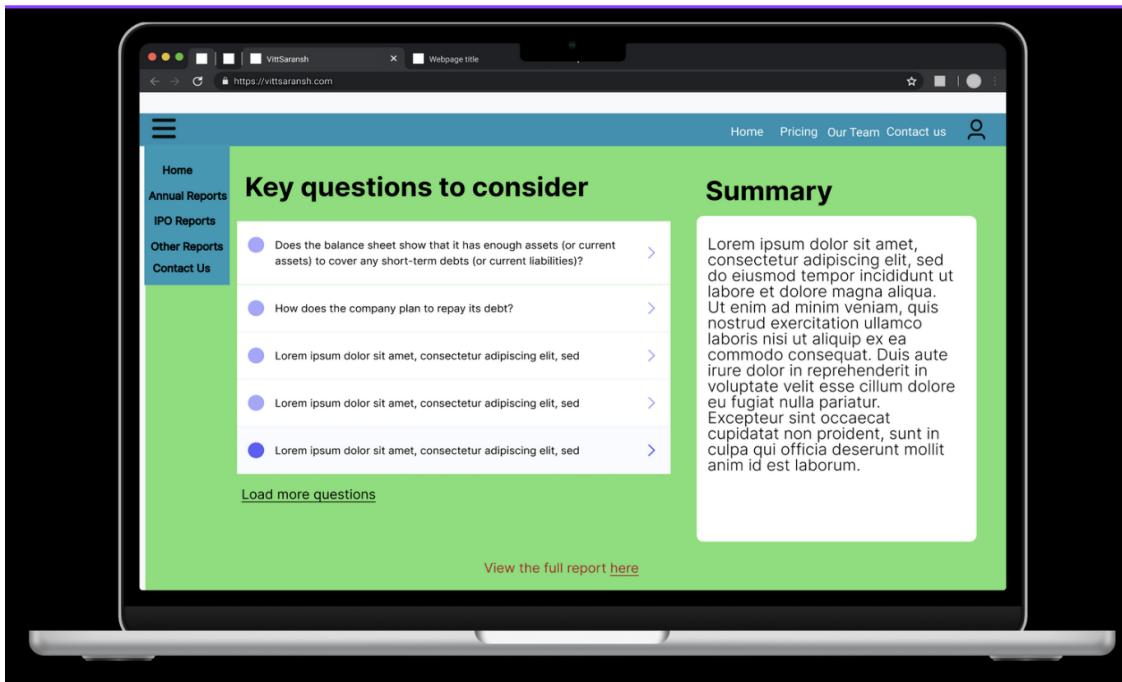


Fig: The screen displaying the summary and key questions to consider

After the prototype was created, the strategy for conducting the prototyping testing was created:

- The users will be given a background about the problem the prototype is supposed to address
- The user will then be allowed to interact with the prototype as they wish
- Minimal effort will be placed to guide the users in order to accurately capture their behavior
- One team member would take note of the user behavior to understand their user flow while another team member will get user feedback through a verbal discussion
- The feedback will be read in a succinct manner towards the end of the testing to validate that we understood their feedback correctly

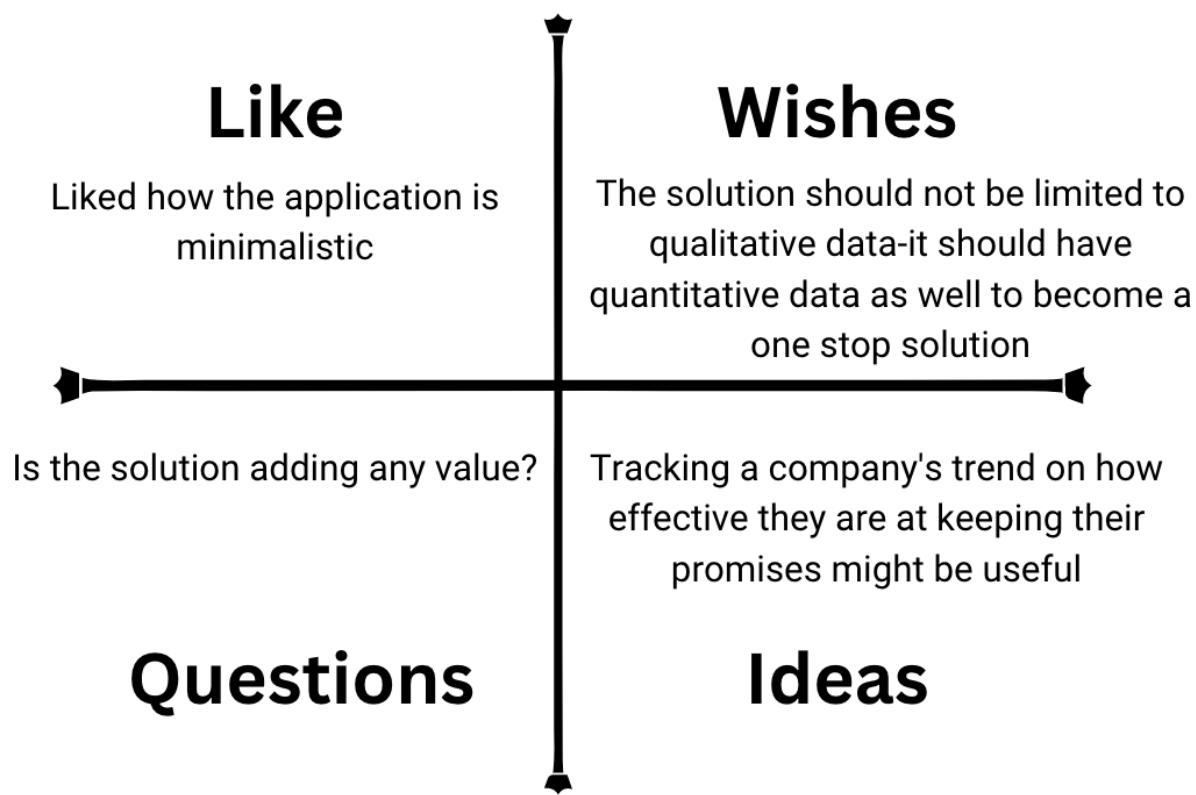


Fig: The outcome of one of the prototype testings

More prototype testing is currently underway and the insights from the documentation of these will be used to make the experience for the users better by finalizing the improvements

in the prototype that will be incorporated in the following iteration of prototyping and prototype testing.

Conclusion

As a group, we applied the design thinking methodology in our approach from the ideation process to user testing. In our earlier approach in selecting the problem statement, we initially began working from a solution-centric approach, which made us focus on the technicalities than the actual pain-point of the potential users. Once we were exposed to the design thinking methodology, we focused on ideation, by framing a problem statement that best describes the user's pain point in the form of achieving a fundamental objective. Post problem ideation, we validated the problem statement with potential users and realized the fallacies in our framing. We then reframed our problem statement based on feedback. The next step was idea generation and selection using approaches that included looking at the problem from the point of view of the user and understanding the perspective of different team members in attempting to solve the problem. Once the approach to solve the problem was prioritized, we built a prototype that represents the intended solution with minimal effort to obtain inexpensive feedback from user tests.

The major learning as a group in the design thinking journey is to empathize with the user, because they are going to benefit from the product we develop. Besides, we realized that the design thinking process is iterative in nature and failing sooner with low effort is better than developing a full-fledged product, only to realise that it is not the ideal solution for the problem.

Contribution

Please note the contribution of the team members towards the creation of this report:

- Adarsh Nair: Idea generation & selection and conclusion
- Kishlay Kumar: Understanding the problem and founders' day interviews
- Pratyay Prakhar: Underlying assumptions and prototyping
- Pujan Chitalia: Customer interviews