



Master Graduation Thesis

# Helping young adults to start investing long term.

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Voor mijn opa Arie,

Die het einde van deze thesis helaas  
niet meer mee heeft mogen maken.

Voor je grote hart, je onvoorwaardelijke liefde en je  
eindeloze vermogen om levens beter te maken.

-

For my grandpa Arie,

Who sadly isn't around to see  
the completion of this thesis.

For your big heart, your unconditional love and  
your endless ability to make lives better.

# Master Graduation Thesis

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# EXECUTIVE SUMMARY

Our relationship with money is a complicated one. Whatever your stance is, it is clear we all need money, whether we like it or not. It allows us to buy our basic necessities to survive. Food, heating, a roof over our heads. Next, it also allows us to thrive, by enabling us to buy things and experiences to help us develop as individuals. So, if we need money, why not try to get more than the minimum, so we can actually thrive? Take good care of ourselves and our loved ones? This thesis, set out to help achieve that. To help and enable more people to set themselves up for a life of less worries and more financial security and thus freedom.

Young adults reach a phase in life where they start earning a proper income, often quite a hike compared to living off their parents or as a student. The question that arrives en masse then, is what to do with that extra income. It is easy to also start spending more, but that's not always the wisest decision. Many turn to their savings accounts, but with interest rates close to 0 and inflation devaluing your money's

worth, parking it all at the bank is not the smartest move either.

After building up a safety net of cash, investing should be brought into the equation, to help young adults build wealth and take care of themselves, today and in the future. People seem to realize the necessity of investing more and more, as seen by the latest increase in the amount of retail investors, both here in The Netherlands (17% increase in 2020 as reported by Centraal Beheer, 2021) as internationally: 15% of the current investors started in 2020 said CNBC (Fitzgerald, 2021)

The problem here is that many retail investors invest in a risky way. 44% of new investors said they were trading short-term in 2020. 2021 then has seen the rise of many 'meme-stocks' such as Gamestop (GME), AMC, BB and many others, where retail investors just "yolo" into buying them, regardless of any fundamentals. Incentivized by the massive gains they see others post, as well as peer pressure, newbie

investors massively pile into bets (it is called Wall Street Bets for a reason), treating the stock market like a casino.

On the other side, we see individuals who are scared away from investing even more, because the situation described above confirms their biased opinion that investing is very risky and dangerous. It is clear that both groups need to be taught how to invest the right way: long term, diversified and slowly. Investing a little bit each month (Dollar Cost Averaging). This method may be the most boring, but it also the most successful.

Furthermore, investing and finances in general have a lot to do with psychology. How can you resist the Fear Of Missing Out, the ups and downs of the stock market and stick to your plan? Research made clear that a mindset should be taught to young investors.

Many of the users surveyed stated they were ready to start investing, but didn't because of a lack of knowledge (34%), not knowing how to start (21%), thinking it was too risky/scary (17%) or thinking it was too complex (15%). The existing solutions, such as YouTube videos, Podcasts and books didn't take these issues away, as became clear in the user interviews and the context research.

After the research phase was done, a precise User Journey was created, pinpointing the issues people phase when trying to get started with investing. The following conclusion was drawn: users want to get more knowledge on the subject of investing, from a source they trust and offered to them in a gradual, guided manner, with their starting knowledge in mind. People often feel overwhelmed and lost.

After the phase 'from research to design', the report follows with the design solution: MoneyMinds. An online platform on financial education that is mindset-focused, gives fundamental knowledge and gives people the confidence to be independent. Through video courses, exercises, personal coaching and a helpful community, MoneyMinds aims to empower young adults to take control of their financial lives, to learn about and start investing the right way, with the right mindset.

The report finishes with a strategic part, that describes how MoneyMinds can be realized: the value proposition, the business model and a full brand manual, allowing for a consistent online presence and matching the audience.

All things considered, this Master thesis offers interesting insight into a relevant problem of today, with a clear path forward. I hope you enjoy reading it.

# 01

## INTRODUCTION

This chapter describes the project brief, goals, scope, research questions and approach, providing a structured overview of the project process.

### 1.1 Context

### 1.2 Design Brief

#### Introduction

## 1.1 CONTEXT

### 1.1.1 Money and Wealth

“Money makes the world go round.”

Sally Bowles (Liza Minnelli) in the musical Cabaret, 1972.

Our relationship with money is a complicated one. Some just want to get as much of it as they can. Others view it as a ‘necessary evil’: something they dislike, but need nonetheless. Many associate it with greed, giving it a negative connotation. Lastly, some see it as a taboo topic, something that’s too private to discuss. Research done by MasterCard (2015) showed that people would rather have their nudes leaked, than their bank information. Complicated indeed.

Money evolved as a simpler way of exchanging value between one another. It was now easier to trade. Next, money allowed for humans to specialize themselves, as they no longer had to be self-sufficient. Not every member of a society had to be involved in gathering food anymore. Some would gather food, whilst others created other products or services and

traded these with the people that gathered food. Money promoted division of labor and productivity: it helped push the human race forward (Guru, 2014).

It is clear that we all need money, whether we like it or not. It allows us to buy our basic necessities to survive. Food, heating, a roof over our heads. Next, it also allows us to thrive, by enabling us to buy things and experiences to help us develop as individuals. This is (one of) the reason(s) we go to school, take on a job, and work hard to make promotion. We need money to survive in this world, unless we want to be completely self sufficient (and accept the lower quality of life that likely comes with that). So, if we need money to survive, why not try to get more than the minimum, so we can actually thrive? Take good care of ourselves and our loved ones? With this thesis, I hope to achieve

exactly that. To help and enable more people to set themselves up for a life of less worries and more financial security and thus freedom.

So, we work and accumulate money. We provide value to others (a company, a boss, a client) and receive money for that. Then, we spend this money on things that are valuable to us. In our global, connected world, money might be what connects us most, what gets sent around.

It is fundamental to understand what money is about. It is not just some number in your bank account. The greatest thing money can buy you, is control over your time. If you have enough money to live comfortably, without having to worry about, you can do whatever you want. Don't like your job? Quit today. Don't like where you live? Change it. Ultimately, money is about freedom.

**Money = control over your time = freedom**

Therefore, it should be a good thing to chase having enough money. It doesn't mean you have to sacrifice any of your values, treat people differently or live very frugal. Just try to make sure you have enough, to gain the ultimate form of freedom.

This realization is what inspired the FIRE

(Financial Independence, Retire Early) movement, and its brother, FAT FIRE (doing so to enable a 'wealthy' life).

As great as money is portrayed in the last few paragraphs, you might very well be thinking that you're relationship with money is not all that great. In fact, according to the Dutch National Institution for Budget Information (Madern et al., 2015), more and more people feel overwhelmed and lost when it comes to their finances. Stress may arise from the feeling of 'not having enough' to live your life the way you want. It is hard to focus on the needs high up in Maslow's pyramid when you don't have the bottom covered. So having enough money can help to take away some worries and allow you to focus on what matters.

But what about that saying, money can't buy happiness? A famous study by psychologist Nobel Prize winner Daniel Kahneman and economist Nobel Prize winner Angus Deaton (Kahneman & Deaton, 2010, p. 16491) analyzed the responses of 450.000 Americans. They found that people's happiness increased as their salaries went up, until they earned \$75.000,- a year, or about 62 thousand euros at time of writing. This seemed to be the magic number, after which more money didn't result in more happiness.

Lower income didn't cause sadness, but it made people feel more down about the problems they already had. *"Among people with asthma, 41% of low earners reported feeling unhappy, compared with about 22% of the wealthier group. Having money clearly takes the sting out of adversities."* (Luscombe, 2010). Another way to put it is that the absence of money causes worry, thus reducing happiness.

So, does money buy happiness then? Well, the researchers pointed out that there are two types of happiness. There is the day-to-day happiness; how you are feeling in the moment, whether you are feeling stressed or feeling emotionally sound. Secondly, there's the type of happiness that is about "how satisfied you are with how your life is going".

Money didn't take away the issues of the day. Richer people were still feeling as stressed and weighed down by the issues of the day. However, the more money they made, the more they felt like "their life was going in the right direction", which most likely impacted this 'second' type of happiness. As the authors put it: *"High incomes don't bring you happiness, but they do bring you a life you think is better."* (Kahneman & Deaton, 2010, p. 16491).

And what about that magic number of 75 thousand dollars? The authors reasoned there

was nothing magical about this number, but rather that it was an average point at which people felt like money was not something they had to worry about any more. Where they felt like they 'had enough'. Other studies also disputed the tipping point theory, concluding that more money actually does create more happiness, reasoning along the lines of Kahneman and Deaton's 'second type of happiness' (Stevenson & Wolfers, 2008, p. 49) (Killingsworth, 2021).

Knowing now how money and wealth can affect our lives and our happiness, the question that remains is how can we set ourselves up for a life filled with the feeling of "I have enough"?

1.1.2 SAVING MONEY

Most of us save money. We do this to attain future goals we might have, or to simply have something for a rainy day, an unexpected bill. And in this recent pandemic, where governments spend billions to combat the economic consequences, the average savings of households actually grows drastically. Where in Q4 of 2019, Europeans on average saved 12,7% of their income, by Q1 2020 this number had already risen to 16,9% (Westerfeld, 2020). See the figure 1 below.

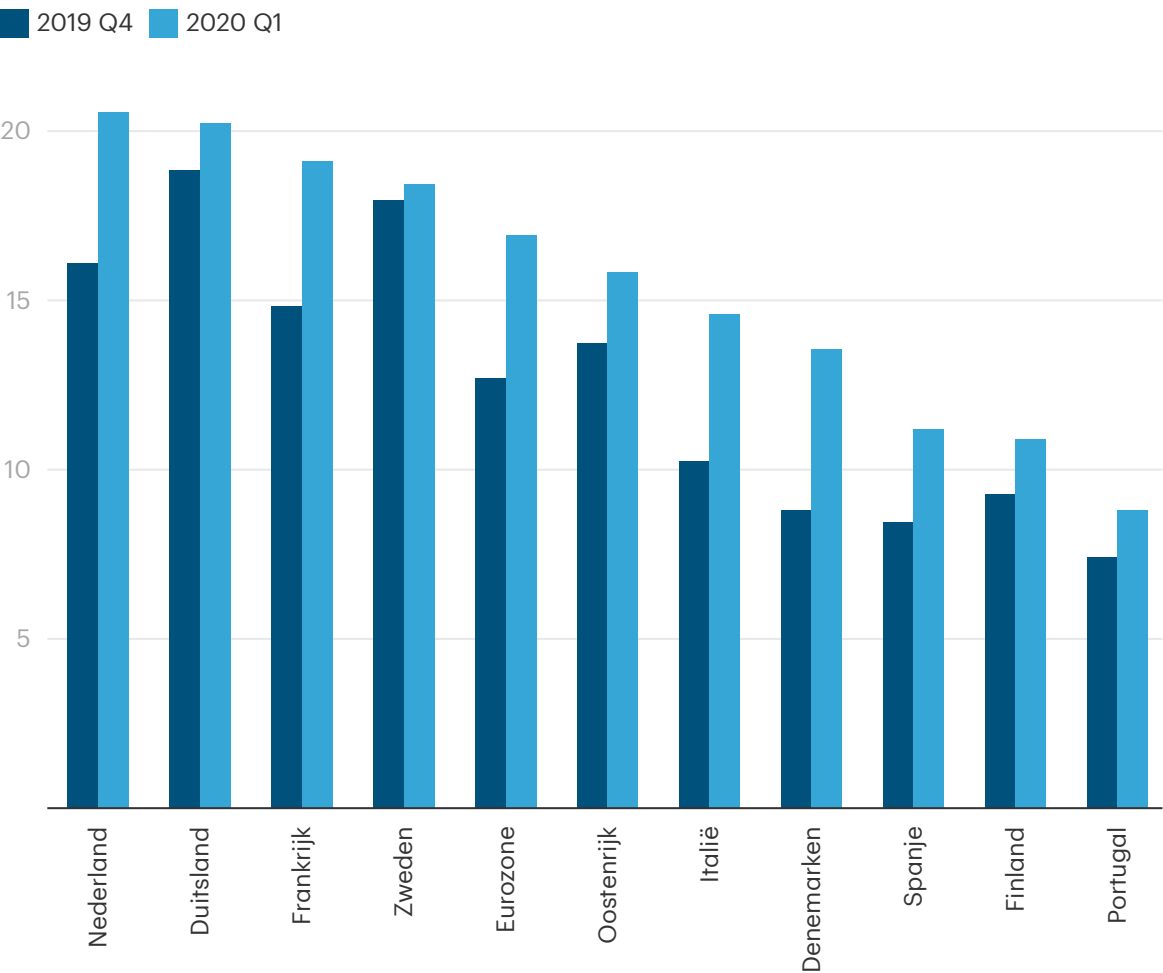


Figure 1. Percentage of income saved between different countries in Europe.

Saving money is, on its own, a good thing to do if you want to accumulate wealth (as opposed to spending it). However, there are three things that are endangering our ability to keep building a better financial future for ourselves in the long term.

INTEREST RATES

When we save money, most of us do so in a savings account at our bank. Some of you reading this thesis might still remember the days of getting anywhere between 4 to a

whopping 15% interest (before inflation) on their savings accounts (European Central Bank, 2003).

Nowadays, we see a completely different story. Due to the European Central Bank’s quantitative easing (QE) policy, central bank interest rates are at (near) zero. This is also reflected in the consumer savings accounts, where hardly any interest is being received. Banks have even started to charge negative interest to their customers depositing more than a certain amount of money. Clearly, our savings accounts are not doing anything for us. Below (figure 2) is an example of what you’d get if you would put away a €100.000,- in savings for a period of 15 years at the current interest rate (0,02%).

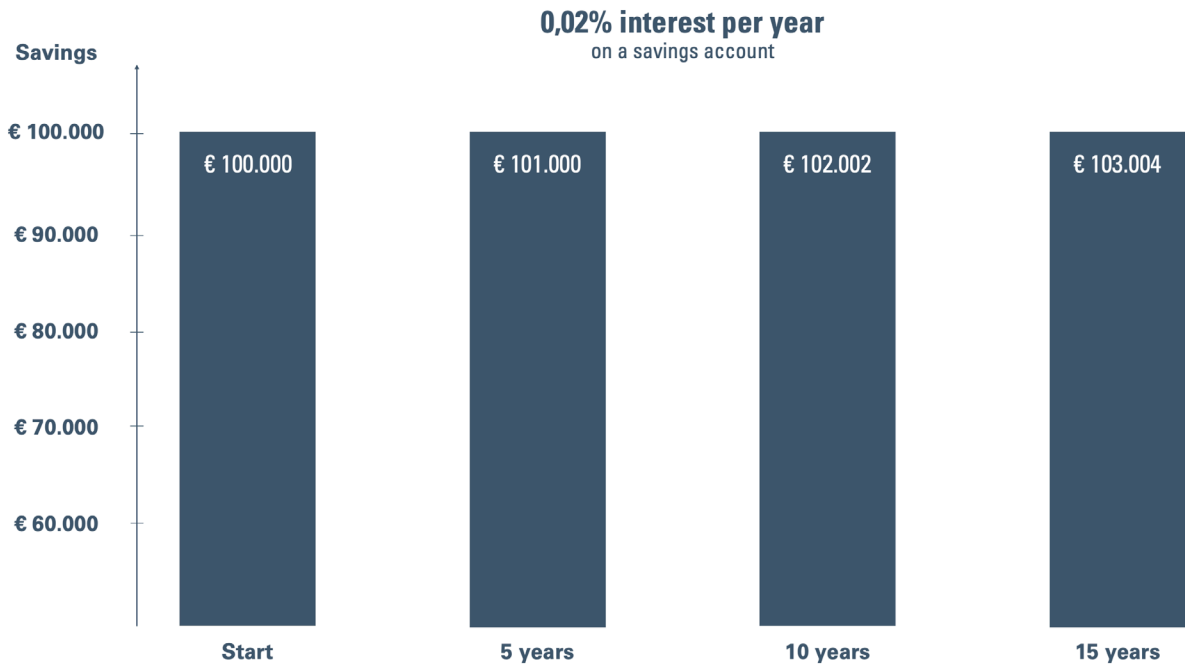


Figure 2. What 15 years of saving does with €100.000,-

INFLATION

So, the money in our bank accounts is not going anywhere. But, it seems safe. It’s not growing, but at least it’s not going down, right? Well, let’s take a look at inflation, the phenomenon where money loses a bit of its value each year (or, rather, the amount of things you can buy with that money, your purchasing power, becomes a bit less). On average over 2020 in The Netherlands, this was 1,28% (Consumer Price Index) (Inflation.eu, 2020).

So, the money in your savings account may stay the same in euros, but what you can do with those euros doesn’t stay the same. Let’s take a look at what 2% of inflation (the goal of the European Central Bank) does to our savings (figure 3).

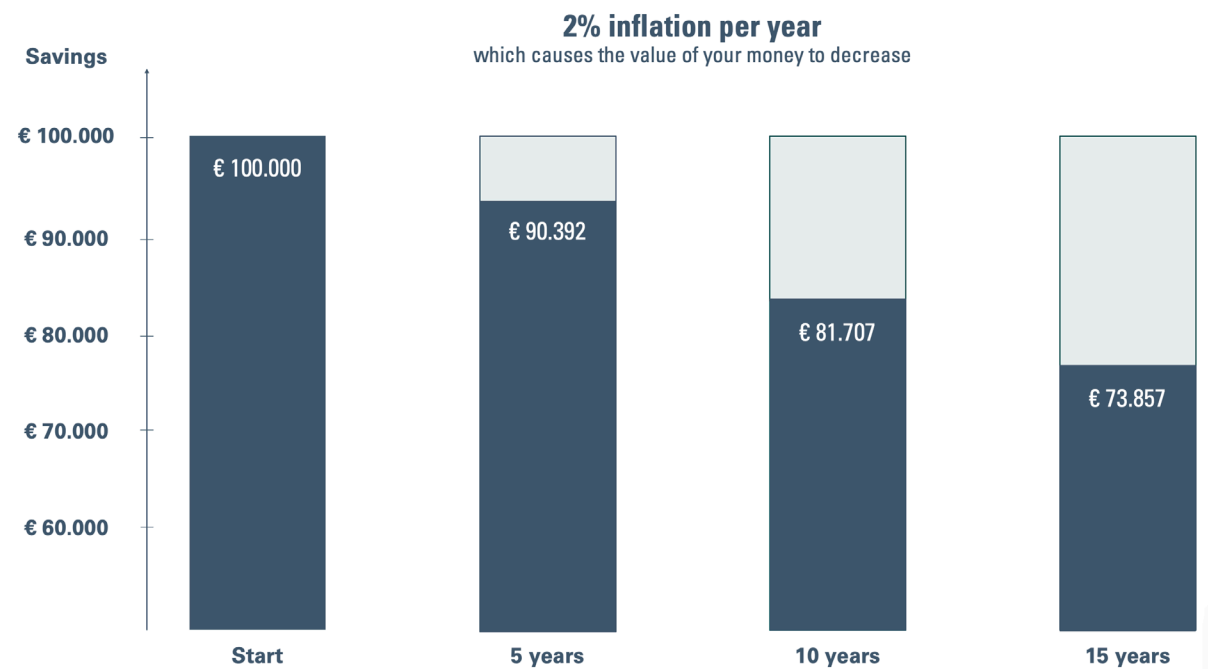


Figure 3. What 15 years of 2% inflation does with your savings

After 15 years, we are left with only €73.857 of ‘real’ money, as in, purchasing power. This is a decrease of €26.143, or over 26%. Now this is not a decrease you would see in your bank account, but rather something you would notice in your every day life. You’d complain about “how much the prices have increased” and that you remember that “in your day, a box of eggs only costed ...”. This is the power of inflation, something we should protect ourselves against.

## TAXES

On top of that there’s tax on wealth in most countries, including in The Netherlands (“box 3” as it is called here). For the year 2021, this means that if you have more than €50.000 in taxable wealth (assets-liabilities), you

effectively get charged with 0,589% of wealth tax (Belastingdienst, 2020). Even if we are generous and round this amount off to 0,58%, it will still hurt our savings over the long-term.

This means that keeping your money in the bank, doing nothing, will actually cost you. Both in purchasing power (inflation) and in taxes! Our imaginary Dutch saver, with €100.000,- in her savings account will effectively ‘lose’ €32.435 in 15 years. This comes down to about €2.162 each year by keeping her money in the ‘safe’ savings account. This is a simplified and illustrative example. See figure 4 on the next page.

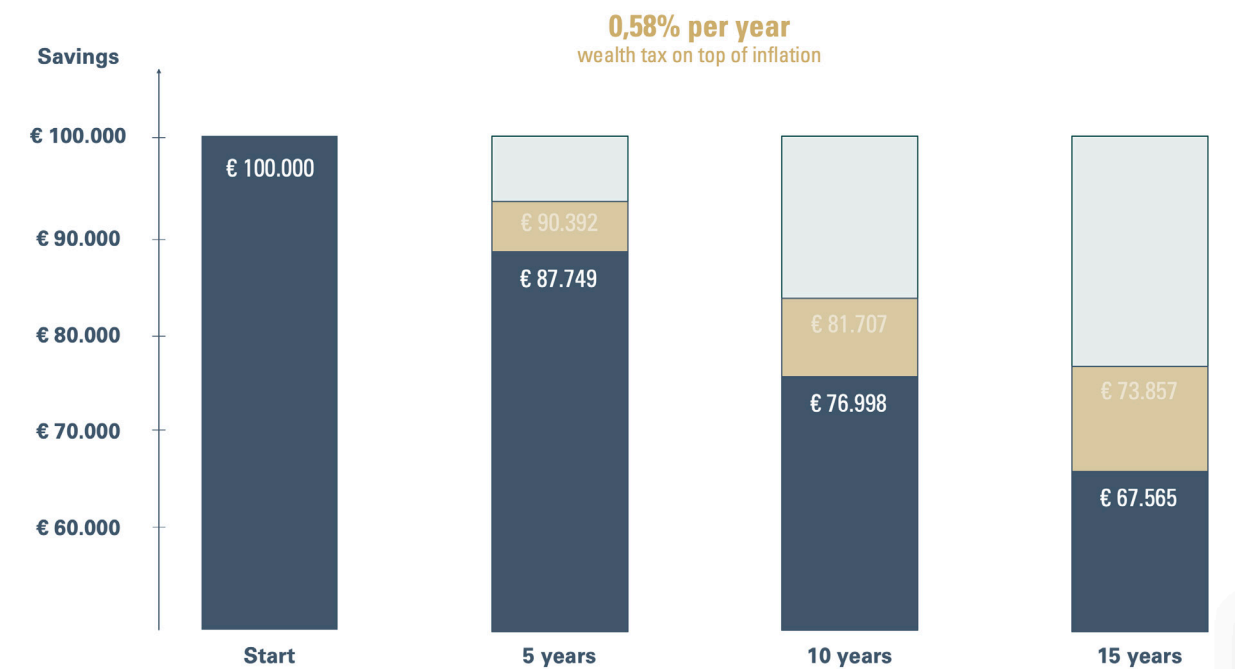


Figure 4. What 15 years of 2% inflation and 0,58% wealth tax do to your savings

## Conclusion

It is clear that, after achieving your desired safety net and short term spendings, you need a better use for the money you’ve accumulated. Investing in the stock market is a great way to make your money grow, especially for those with a long-term vision.

# 1.2 DESIGN BRIEF

## 1.2.1 Target Group

This project is focused on young adults. A large factor for investing and building wealth successfully is time. It thus makes sense to focus on a younger target group, as they have plenty of time to invest and to compound, as opposed to older people. A lower boundary also exists of course, as you need to be at least 18 to open an investing account in your own name. Furthermore, investing is impossible without income and ideally some savings too. Therefore, this project revolves around individuals that are almost entering the job market, have just entered it or are working for a relatively short period of time.

The focus is on those with a low financial interest. They don't know (much) about investing and aren't currently investing yet.

The target group of this project can be roughly seen as young adults between 23 and 35 years old, though no explicit boundaries exist that would make it unfit for those younger (above 18) or older.

## 1.2.2 The Problem

Individuals that recently entered working life all experience the same joyful moment of receiving their first paycheck. For many of these young adults, this sudden increase in income doesn't only bring joy, but also questions. What to do with the extra money? Most of them were raised by a generation that taught them to save, and put every extra euro in a savings account. However, as we've seen before, a savings account is not going to help them to make their money grow in the long term. It is clear that, after building up a safety net, the rest of the extra money accumulated should be put to work, to grow and help build toward a more secure financial future.

Young adults are not setting themselves up for a successful financial future. Investing can be a great way to generate extra wealth, but it faces a lot controversy and questions by a lot of young adults. Some perceive it as gambling, or very risky, whilst others simply don't understand what it is about or don't see the benefits. It should be made clear to the

target group what investing is about, why it can be a valuable tool for their financial future and how they can best utilize this tool. A possible way to truly influence the target group and to create a successful design intervention would be to convince them of the value of investing, for themselves and for the world around them.

What if we could teach young people to make their money work for them? What if we could help them take care of themselves in the future by using money to create more, instead of having it decrease? It should be made clear to the target group what investing is about, why it can be a valuable tool for their financial future and how they can best utilize this tool.

## PSYCHOLOGICAL

There are certain psychological challenges that need to be researched and solved. Investments should be made tangible. To drive engagement with the solution over time, to keep people motivated and to give a sense of progress besides just the numbers. People need to be convinced to start investing and need to be shown the value of it. There's also the fact that investing can be hard on your emotions, as markets tend to go up and down. As human's we're pretty hardwired to react irrationally and therefore in a way that hurts our returns. This should be overcome through design. Lastly, there's the balance between short-term and

long-term benefit that should be navigated.

## SUSTAINABILITY

A second opportunity is to allow the target group to also do good with their money, by investing in companies that are helping that are helping to solve the problems the world faces today. Sustainable investing, impact investing and ESG are hot topics in asset management land. It should be explored if the target group is actually interested in doing this, especially if they think this will hurt their potential gains.

## 1.2.4 Assignment

I will research the possibilities of helping people to start investing for their future, to allow them understand investing and to get to know their values. I will generate insights from research, people in the industry and most importantly the target group through surveys and interviews to find how to tackle their needs and wishes. I will then design a digital tool that aims to help people start long-term investing, understand it and invest in a way that is aligned with their values.



## 1.2.5 Project Setup

Broad overview - First phase of research and truth finding, followed by rapid prototyping and quick iterations based on multiple validation moments. There will be validation on both on the user side (target group) as the business side (asset managers).

The project set out following a typical Double Diamond process, consisting of the Discover, Define, Develop and Deliver phases. See figure 5.

During the project, a switch was made towards a Lean Startup 'light' method (figure 6). Emphasis was placed on creating a Minimal Viable Project, an MVP. Through testing assumptions, user testing and iterations, a final design was created.

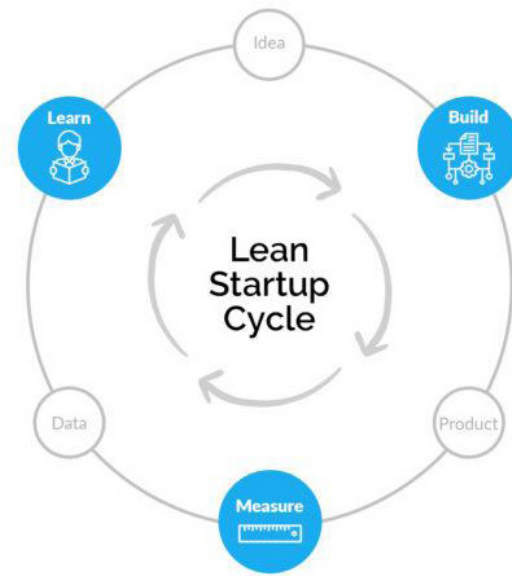


Figure 6. The Lean Startup Cycle.

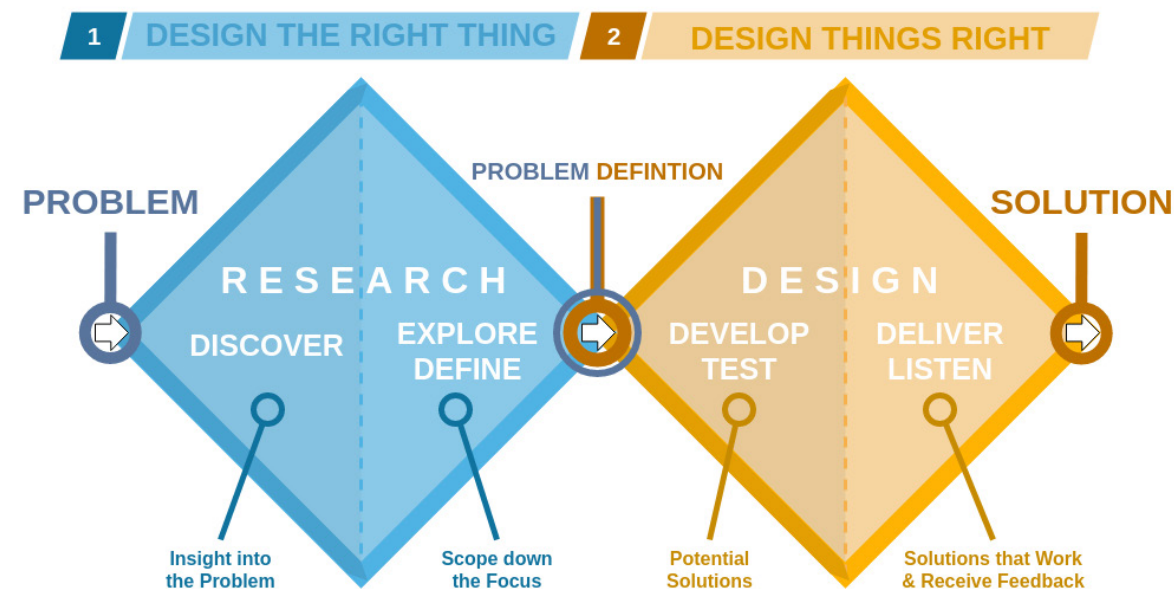


Figure 5. The Double Diamond process as defined by the British Design Council.

## 1.2.6 Research Questions

These are the research questions that were determined at the start of this graduation project. Note that these are susceptible to change later on, as the scope of the project becomes more clear.

### I - Target group

1. What are the main concerns for the (financial) future for the target group? (E.g. societal worries, personal)
2. What is the current spending pattern of the target group?
3. What is the current opinion of the target group about investing?
4. Find the cluster of characteristics of target group to focus this project around, for example: age, career, personal life, mindset, risk appetite, vision on long-short term investing

### II - Investing

1. What is investing about?
2. What is the best way to get started with investing?
3. What is the influence of personal circumstances on how to invest?
4. What are the pitfalls when it comes to investing? How can they be overcome?
5. What is compound interest?

### III - Financial

1. In which ways can investing be used for your financial future?
2. What are good ways to plan for future financial situations?

### IV - Competition

1. What are the other solutions that are currently out there?
  - What is great about those solutions?
  - What is not?

### V - Societal

1. What investment vehicles with societal impact exist?
  - What are their benefits/downsides?
2. How can you make this impact tangible and visible?

### VI - Psychology

1. What models exist regarding behavioral change
2. What are some of the ways that exist to get people to start changing their behavior?
3. What are ways to influence the target audience?
4. How to keep people invested and counter their natural tendency of irrational behavior?
5. How can you help people choose long-term over short-term gains?

### 1.2.7 Motivation

Two years have passed since I, a (strategic) designer, started a business that caters to the financial sector. Together with my co-founders we started [Core Digital Strategy](#), a boutique consulting and design firm serving mainly the Asset Management industry. In these years I've had a lot of exposure to financial products and investing. Not having any schooling or knowledge on this subject, it was a strange world for me at first. Gradually I became more accustomed with this world, it's jargon and it's practices. It astounded me how little people (young and old) know about investing. How little they are thinking about their financial futures and actively building a better tomorrow. This is an issue that should be tackled sooner rather than later, and the earlier in your life you make this change, the better. On top of that, many of the existing solutions simply don't work for people. Or they turn investing into a game, or gambling. Investing should be seen as a tool to build a better future for all. A great equalizer between generations and people. This is what motivated me to start this project. I wanted to come up with a solution for the issues mentioned above and help individuals set themselves up for success.

If my project were to be executed well and scaled up, I think it would:

1. Let people build a better financial future

- and a better world with their savings.
2. Contribute to narrowing the wealth gap between different "classes" in the population as you help more people amass assets. Being able to invest can be a great equalizer, as investing so far has been something that was mostly for the wealthy or those who could afford financial advisors.
  3. Give financial control and assurance to people, which is hugely relevant during the Corona Crisis and all the uncertainty that entails.

I want to further develop these skills: prototyping, UX/UI design, product & service innovation, branding and marketing. I also want to apply my current skills of visualization, storytelling and knowledge of investing. I want to do deep research, going further than any other solution out there, attaining a more fundamental understanding of the problem. Then, I want to apply rapid prototyping and create a high fidelity, working prototype, that's user-tested (and approved!).

# 02

## CONTEXT RESEARCH

This chapter gives a detailed description of the findings of the context research. The aim of the context research is to understand investing on a theoretical basis. Next, we dive into existing solutions, trends and try to theoretically understand the target group and their behavior.

### 2.1 Investing

### 2.2 The Psychology of Behavioral Change

### 2.3 Existing Solutions

### 2.4 Trend Analysis

### 2.5 Persona

### 2.6 Investing behavior of young adults



## 2.1 INVESTING

### 2.1.1 Personal Finance

Anybody interested in starting with investing, has to start with his or her personal finances. After all, investing is a way to grow and accumulate wealth in the long-term. One can only plan for the long term, once the short-term, the day to day, is covered. Therefore it makes sense to start with personal finance. There is plenty written about this topic already, so I'll keep it to a minimum.

You should have a lifestyle that fits within your income and still leaves room to save. This is not the same as saying "live your life as you want, and save what's left". Hans Betlem, Chief Investment Officer of IBS Capital Allies calls this "paying yourself first". Once you've figured out how much you want to save (a % of your income, or based on future goals), the rest of the money goes to your expenses. By setting aside money for yourself (saving and investing) first, it helps you not to overspend.

How much you save, of course correlates with your income and your spending. Betlem

mentions it is way harder to change your income, than your spending. You might get a promotion, or change jobs, but it is hard and will most likely not be a gigantic difference. Your spending on the other side, is under your full control. It is important not to get carried away, not wanting too much, getting a new car just because the neighbors have one ("Keeping up with the Joneses"). Betlem therefore states: the amount you can save is your income, minus your ego. Keep your ego under control and saving becomes a lot easier (Betlem, 2019).

Once personal finances are under control and we are saving a certain amount every month, we can talk about investing. But what to invest in?

“

Saving is income minus ego

”

---

Hans Betlem, Chief Investment Officer IBS Capital Allies

2.1.2 What are stocks?

The ownership of most companies is divided in shares. Just as a beach consits of many individual grains of sand, most companies' ownership is made up of a lot of individual shares. In the past, these were actually physical pieces of paper stating the name of the company and the name of the person that bought the share, the shareholder. Shareholder companies have been around for a very long time and actually date back to ancient Rome (Stringham et al., 2015, pp. 1–3). Stringham also notes that the first actual stock market was created in Amsterdam in the seventeenth

century, when people could trade shares of the East and West India Company (VOC & WIC), in 1602 and 1621 respectively. See figure 7.

Nowadays, all this information is digitized and being tracked by an exchange. On this exchange, people buy and sell stocks to each other. As an individual, you can't directly buy stocks on an exchange. You need to do this through a broker. Examples of well known brokers in the Netherlands are Binckbank, DeGiro, BUX Zero and eTorro, but it's also possible to invest with your bank, such as ING or ABN AMRO.

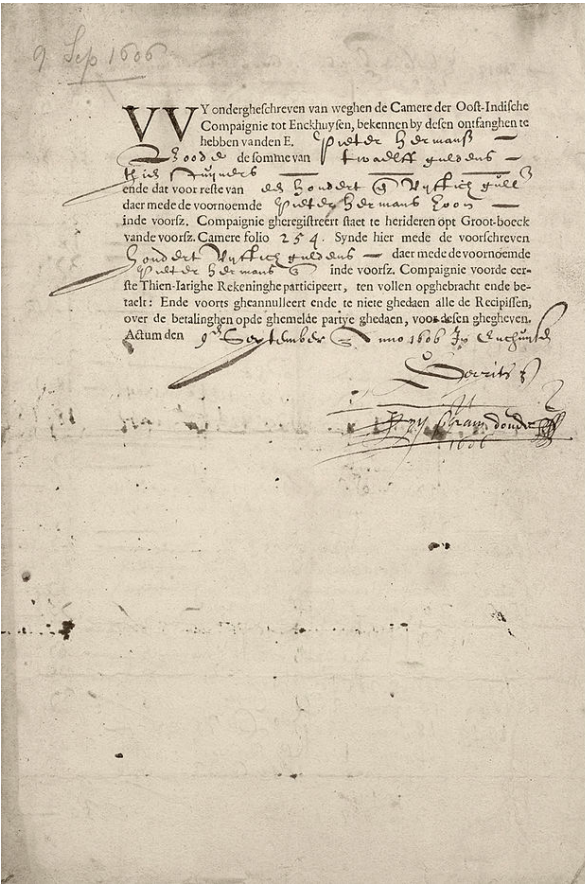
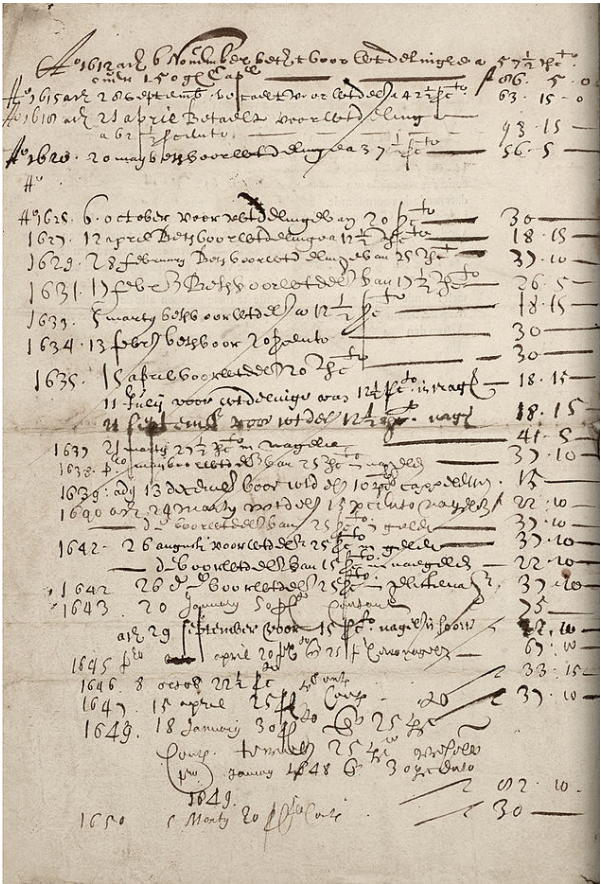


Figure 7. A VOC stock issued on September 9, 1606.



2.1.3 Why stocks?

There are a lot of different things to invest in, also known as asset classes. There are equity (stocks), bonds (loans to government / business), gold, real estate, crypto currencies and much more. So why should the young adult, with a long-term view, invest in the stock market?

Stock markets are the greatest compounder of wealth the world has ever seen (Stanhope, 2019). But, to become a long-term investor, it is important to understand why. The stock market is the average of actual companies, that are part of the real economy. You are investing in a business, that does what companies do: creating value and receive money in return. So owning a stock is owning a part of the future cash flows (earnings) of a business.

Stocks compound because companies generate a profit and management of the company uses this profit to improve the value for shareholders. They can either:

- 1. Reinvest it back into the business to grow it even further (investing in company itself or by acquiring other businesses).
- 2. Distribute the part of the profit back to shareholders (dividend).

If you take the average of all companies in the U.S. since 1871, their earnings have grown

3,99% annually (Shiller, 2016, pp. 1–3). Some grew a lot faster, some a lot slower, some went bankrupt along the way, but 3,99% is the average. So this is the first way companies increase in value.

The second way we get returns from investing in companies is dividend. As co-owners, we deserve a part of the profits the company makes. If we take the same average of all companies since 1871, we would receive another 4,55% of return in terms of dividend. So our total return on average is 3,99+4,55 = 8,54% per year.

Important to know is that the management of a company always has a choice on what to do with the profits and how to best create value for shareholders. For a fast growing company, that might be to reinvest all the profits back into the company to further accelerate that growth. For a slower growing company, growth opportunities might be more limited. It can therefore be better to keep the business growing organically and give the rest of the profits back to the shareholders via dividend.

So, how much is a company worth? What is a good investment? Stanhope says: "The value of any company should theoretically be the combined value of 1) its existing business persisting into the future, and 2) a

speculative component that represents the market's guesstimate of the present value of future growth.". The simplest way to measure a companies valuation is looking at how much do people pay for €1 of earnings. This metric is known as 'Price-to-Earnings', or PE. In 1871, people were willing to pay about 11,10\$ for every \$ of earnings of a company. Over time, this value has gone up to about 18, but it averages on 15. This is an increase of about 0,47% each year, know as the multiple expansion. Adding this to our 8,54% creates a nice, 9,01% return per year on average.

We can now conclude that markets go up over time, because the average company grows its earnings over the very long term, dividends are paid and markets value the stream of earnings and dividend differently over time.

You might now still wonder, but why do the earnings of companies go up over the long term? Why do companies on average keep growing and making more money?

INFLATION

There are three factors at play here. The first is inflation, which we've discussed before. Costs, for example of raw materials or labor, go up when there is more demand than supply. Think of it as too much money chasing too few goods, says Stanhope (2019). This increase in costs will in the end be paid by the consumer, as the company will have to increase their price a bit to keep making the same profit.

PRODUCTIVITY

The second factor is productivity. Thanks to technology, humans get increasingly better

at what they do (Neumann, 2019). There is either value creation (something completely new as the steam engine that started the industrial revolution, or let's say, the internet) or efficiency gains that happen incrementally. Productivity, defined as real GDP per capita, as been steadily increasing with about 2% since 1947 (Dalio, 2017).

Inflation is usually more volatile but tends to average around 3% (in the U.S.). Inflation and productivity also play well together; inflation drives up the costs, making humans find innovative ways to do more with less: to be more productive.

DEMOGRAPHICS

The last force that causes earnings to grow is population growth. There are increasingly more people in the world, who also want to buy products and use services. Which a company offers to them.

Now we understand why the stock market in general tends to go up over time. Note that this certainly isn't true for any one individual company, but it is for the market, the average of all companies as a whole. Capitalism, with all its imperfections, works. Business generate profits. The successful ones employee people. These employees earn salaries, that they spend in their lives. "Technological innovation

occurs, resulting in disruption to the status quo and new value creation." says Stanhope, (2019). Now we just have to hope that these companies will invest their earnings in to new innovations, that push human productivity up for decades to come.

2.1.4 Passive Investing

To make sound decisions about how you want to invest, it is important to know about indices (singular: index) and mutual funds.

An index is a group of individual stocks clustered together. There are over 5000 indices in the U.S. alone (Banton, 2020). It is likely you have at least heard of some, as the media reports on some for multiple times a day. Examples are the S&P500, the Dow Jones Industrial Average, the NASDAQ or closer to home the AEX in Amsterdam. The reason the news reports on these indices is that they are used as a proxy for how well the market, and the economy, are doing.

To understand why, we have to understand how an index works. There are different ways to construct an index, but most often it is done by 'size' (to be more precise, by market capitalization) or by sector. The S&P 500 for example is an index consisting of the 500 'largest' companies in the U.S. (that are publicly traded). This seems to be a good proxy for the

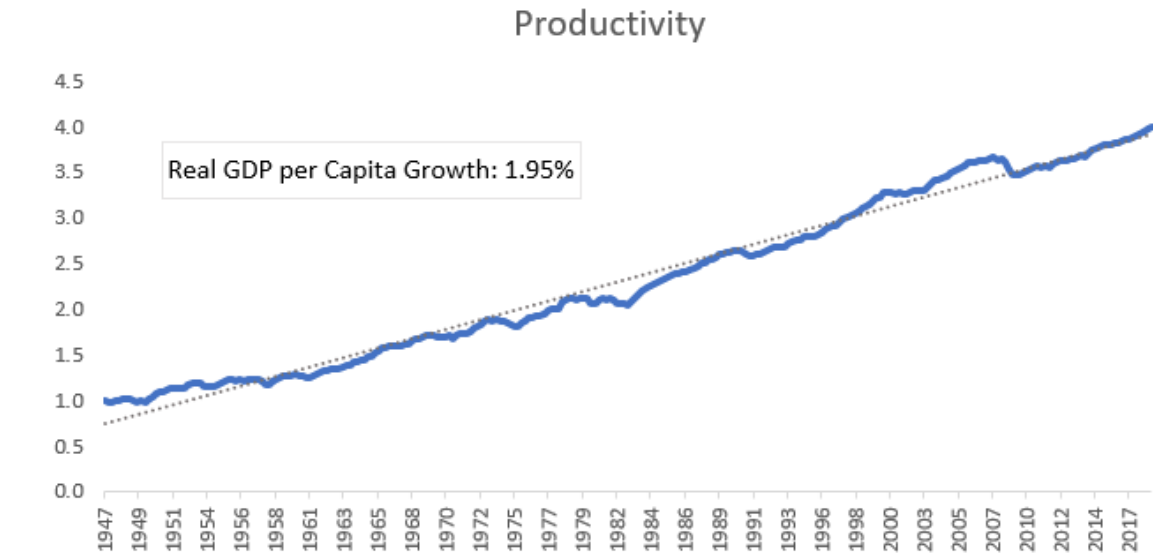


Figure 8. Productivity over time defined as real GDP per Capita Growth.



U.S. economy, as they account for about 75% of GDP.

In the seventies, a new theory arose in scientific research on investing. The Efficient-Market Hypothesis by Fama (1970, p. 383), although it can be partially traced back to Bachelier (1900), Mandelbrot (1963) and Samuelson (1965). This theory states that at this present moment, all information that's available about a company is already woven into the price of the stock on the market. Picking the right stocks that will outperform the market is therefore a coin toss. Only looking back, can we see which stocks performed better over time. Following this thinking, it makes sense not to pick stocks, but just invest in all of them "the market", so you always get market-like returns. This led to the birth of Exchange Traded Funds, better known as ETFs. ETFs are investment vehicles that try to match a chosen benchmark, the index, as close as they can. In the example of the S&P500, ETFs that follow this benchmark will buy all 500 company stocks in there, to the same ratio as they are in the index.

The benefits of ETFs are that you can achieve a really diversified portfolio very easily. When buying individual stocks, you have a minimum purchase of one full stock each time, you can't buy 0,75 stock of Tesla (\$TSLA) for example. If you would want to recreate the S&P500 in

your portfolio yourself, you'd have to buy all 500 companies, to the ratio that they are in the index. This would require a large starting sum to invest with, as well as it would be quite a hassle to do (and maintain). ETFs solve this problem, by doing the selection for you, and allowing you to buy way smaller fractions.

ETFs are generally also pretty cheap, in terms of management fee, a fee you pay as investor to the Asset Manager managing the fund. Fees are in general about 0,2 to 0,3% of your investments.

The way of investing that follows a benchmark, usually through ETFs is called passive investing. As the name suggests, there is also the opposite, which is called active investing. This was the de facto way of doing things before the rise of the Efficient-Market Hypothesis and ETFs.

## 2.1.5 Active Investing

Active investing is about stock picking. It comes from the conviction that it is possible to achieve better results than the market, by selecting the right stocks. This is by definition possible, as the market is the average of all investors. It is however, pretty difficult.

One option is to do your own research to find the best stocks. For most that are not

interested in investing, or don't want to spend so much time, this option is not ideal.

A better way to do this could be through the use of mutual funds. Professional asset managers create these funds to invest in the market. Individual and institutional investors 'give' their money to the asset manager, who then buys stocks for in the fund. Portfolio managers then maintain, monitor and if necessary sell & buy new stocks for in the fund. The increase in price of the stocks in the fund, as well as the dividends these stocks give, increase the price of the fund. Like ETFs, mutual funds usually can also be purchased in smaller quantities, giving the same benefit of easier diversification. Funds can be clustered around certain themes (FinTech stocks, healthcare stocks, etc.) or styles of investing (high-dividend yielding stocks, growth stocks, etc.).

Funds are usually quite expensive compared to ETFs, with management fees ranging from 0,5% to 1,0% or more. This is because the asset manager has people employed to make decisions and manage your money for you. Those people need to get paid, and the company also needs to make a profit, whereas an ETF simply has to follow a benchmark. The decision between active and passive depends on your personal preferences, and whether you believe your active manager(s) will do better.

## 2.1.6 Price & Volatility

As seen on the previous pages, the price of stocks, (or ETFs & funds for that matter), in general, go up over time. However, it is never a smooth ride. This has to do with volatility, the amount of fluctuations in price. We've seen that the price consists of some kind of intrinsic value, a multiple of the earnings, and the subjective sentiment discount/premium. This subjective part is likely to change a lot over time. Investors change their minds, there is good or bad news about a company, etc., and the price drops or increases as a result. This is caused by investors buying or selling the stock. Basic laws of supply and demand dictate that when there is more demand than supply, sellers can ask for a higher price, and therefore the price increases. The opposite is obviously true for a lower demand.

To understand the risks of investing, it is important to understand that a lower price on a stock you own, doesn't mean you as an investor lost money. It simply means that you bought something, that today is worth a bit less. That could be completely different tomorrow. You only lose money, when you sell your stocks for less than you bought them. As we now that stocks in general go up over time, it is therefore important not to panic when the price goes down. Just hold on to your stocks, the price will most likely recover again.

For young investors, which are the focus group of this thesis, a lower price is actually a blessing. The legendary investor Warren Buffet famously explained this in his story about hamburgers. It goes somewhat along these lines: Imagine you love hamburgers, and are planning to eat them from time to time for the next 30 years. Now, would you like those hamburgers to be cheaper or more expensive. Let's ignore the fact that we should eat less meat and a higher price would probably help achieve that. If we simply think about the price of our groceries, we would of course like those hamburgers to be cheaper, as we would spend less and get to keep the money for other things such as our hobbies.

Now when asked the same question, but then regarding stocks instead of hamburgers, people seem to have a lot more difficulty to answer. When we purchase stocks, we want them to only go up, to only see green numbers in our accounts. However, those same hamburgers that you are going to be buying, those stocks, now get more and more expensive and you can actually buy less of them for the same amount of euros.

This is why a crash early in your investment career is actually a blessing, as you get to buy at a cheap discount (of sometimes 40 or 50%!).

To quote Buffet again: *“Be greedy when others*

*are fearful”* (Moyer, 2017). Or to quote Baron Rothschild, an 18th century British nobleman: *“the time to buy is when there’s blood in the streets.”* (Forbes, 2009).

Volatility is a necessary thing. If markets weren't volatile, everyone would put all their money in investing accounts. We wouldn't have the returns the stock market offers. As Betlem says (2019), volatility is the price you have to pay for these returns. If you can stomach the bad days, weeks, months and years, and hold on to your investments while you keep buying, you will get stellar returns. Volatility is the price of admission.

2.1.7 Emotions

To achieve the above, we should invest very rationally. However, as we all know, investors are people, and people are not the most rational beings.

As we invest in the stock market, as prices increase and decrease, we're sure to feel a lot of different emotions. One of the greatest visualizations I've come across so far is the one shown here, made by Russell Investments. They call it the Cycle of Investor Emotions, and though there are many different names for it, the principle stays the same. As markets are going up, we tend to become optimistic about the future. Once the growth stays, we

become excited, feel the thrill and finally reach a state of euphoria. This is the point of maximum financial risk, as prices have grown for a long time, and stocks are most likely to be overpriced. Yet this is also the moment we feel unstoppable, as all our latest investments have done nothing but go up. Thus, we keep buying more, taking on more risk, overestimating our chance of success. This is the worst moment to buy, yet we tend to buy here massively.

Then, inevitably, the music stops. The markets are going down and our emotions change. First comes denial: “just a small correction, it'll recover in no time” you might think. Next comes anxiety, followed by fear.

As things really go south, we become depressed about the money we feel we've

lost. We panic, and sometimes even capitulate and sell our assets, as we're afraid to lose even more. Those that have stayed invested might feel despondency, wondering why they ever invested their hard-earned money in the markets. These low points, both emotionally and financially in terms market value, tend to be moments where we sell, because we have been battered and bruised by the market. They are also the worst moments to sell, as the market is at its lowest point in years, meaning you'll probably sell with a large loss. They are actually great moments of market opportunity, if you have the rationality to ignore the emotions around you, the headlines in the papers and all the stress that comes with it. Buying at highs and selling at lows is what Carl Richards (2020) calls the 'Behavior Gap'.

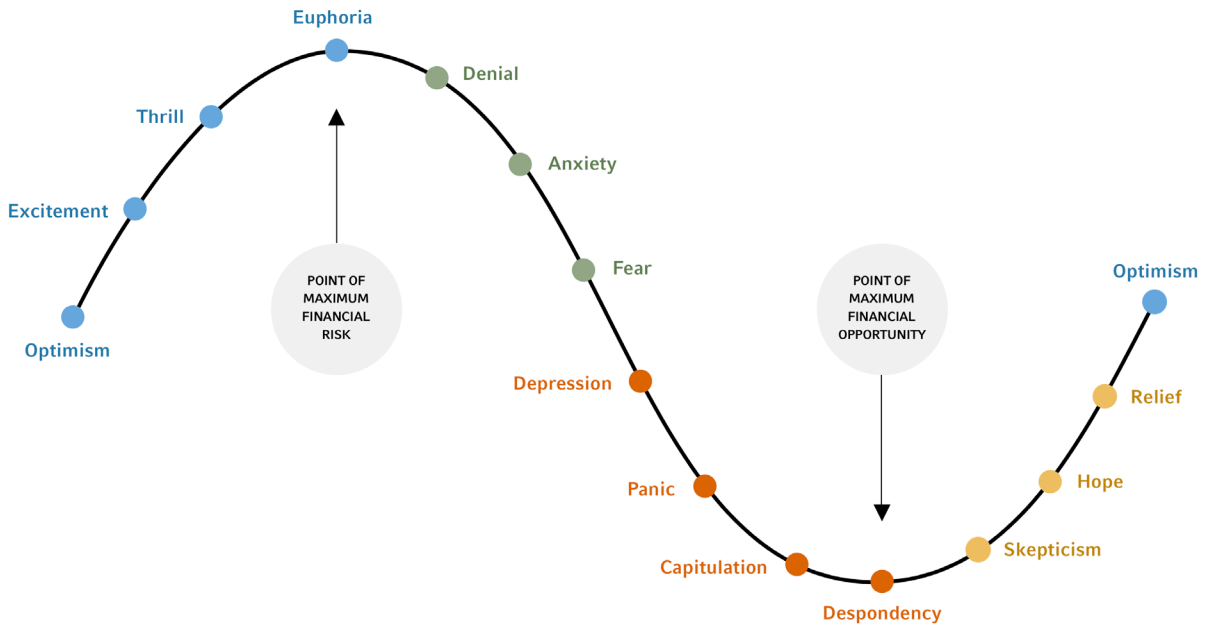


Figure 9. The Cycle of Investor Emotions by Russell Investments.

Because inevitably, the market will recover and start going up again. First, we will be skeptic, then hopeful and finally relieved, that it wasn't all as bad as we thought it would be. Then, we're right back where the circle started, and we're feeling optimistic again. Strap in for another ride as the wave keeps on coming. To become better investors, we should not let our emotions take over. But being so rational is very hard, even if you know this graph and believe it's the right course of action.

An often heard question is, why not simply sell everything at it's highest point. And then wait for it all to collapse. The issue here is that you have to be right twice. First, you have to be able to identify to absolute top of the wave, and sell everything then and there. How can you be sure it's not just a little dip before it goes up again? Next, you have to be right again identifying the absolute bottom. This is just as hard. Because you have to be right twice and so difficult, you most likely sell to early or buy too late, causing you to lose out on a lot of gains that you would have gotten if you simply held on.

This is the sole reason that the average investor always lags the benchmark. As Betlem (2019) says: "Crashes have the bad habit of scaring some investors out of their stock investments at the lowest points.". This brings us to the next chapter, where we discuss timing the market.

2.1.8 Timing vs. time in

Let's take a look at the S&P 500. Since 1980, there have been 5 big crashes up until 2020. They are Black Monday (or Tuesday) in 1987 (-33%), the Kuwait War in 1990 (-19,7%), the famous Dotcom Crash in 2000-2002 (-49%), the Financial Crisis between 2007 and 2009 (-56,5%) and of course the latest caused by COVID-19 in 2020 (-34,1%). Despite all these crashes, the index has been going up steadily. Let's take the theory of timing the market to the test, and introduce three imaginary savers & investors:



Figure 10. Three investors

They will all save \$200 per month from 1979 to 2020, totaling \$99.000. They all invest this in an S&P 500 ETF following a buy-and-hold strategy: after buying they keep holding the stocks, never selling them. The only thing that's different is their timing.

Tiffany Top saves the \$200 in a savings account where she gets a generous 3% interest. She waits for the perfect time to invest. However, she turns out to have the worst timing in history, as she dumped all her investments into the market on *the day before*

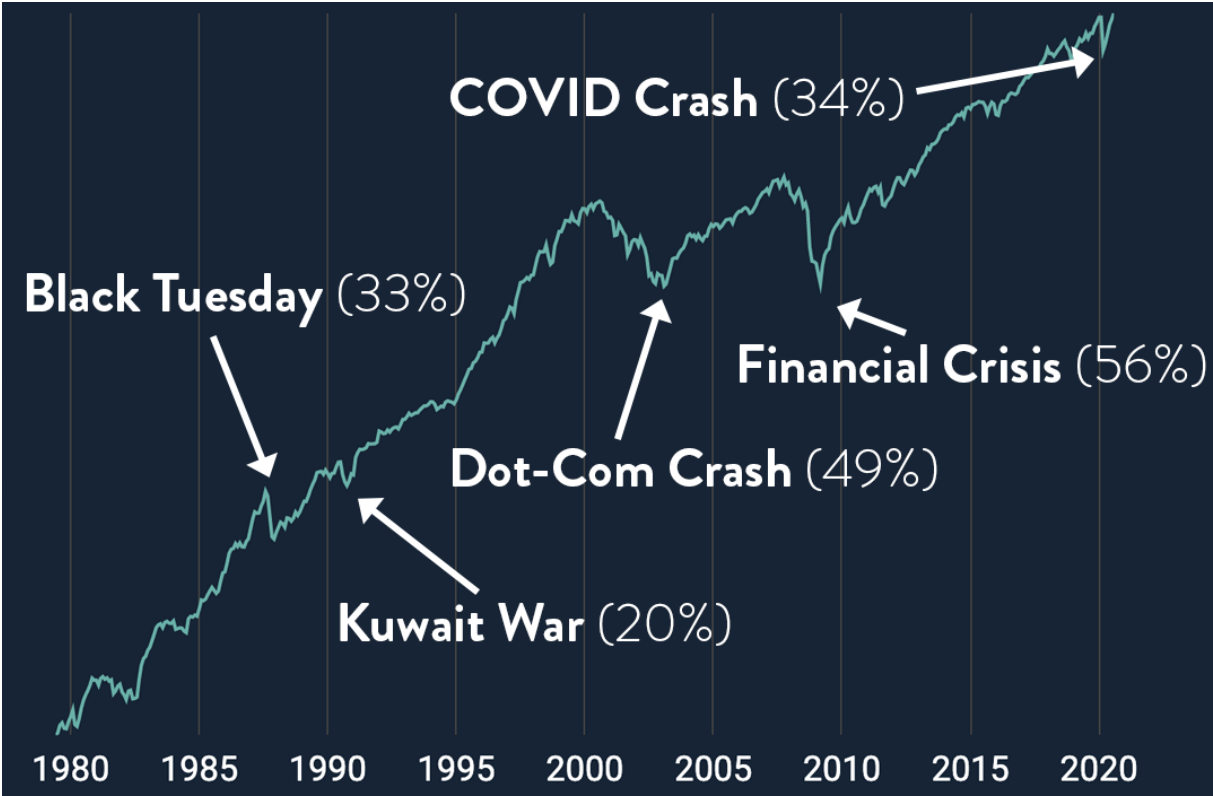


Figure 11. The S&P 500 from 1980 to 2020, on a logarithmic scale. Image by [Personal Finance Club](#).

*the four biggest market crashes.* Even though her horrible timing, Tiffany turned her \$99.000 into \$773.357.

Introduce Brittany Bottom. She does the same with a savings account and waiting for the perfect moment. She however, turns out to have the best timing in the world. She buys on the lowest moment after all of the four big crashes. She turns her \$99.000 into \$1.123.573.

Looking at those numbers, you might think that timing the market actually works. Keep in mind though, that it is extremely hard to get the timing right, which unfortunately has more to

do with luck than skill. But, let's introduce our third investor, Sarah.

'Slow and Steady' Sarah doesn't feel like watching the stock market every day for forty years. She just opens an account in 1979, and sets it up to automatically invest the \$200 each month, no matter if the stock market is at a high or at a low. By doing this, and never selling, she turns her \$99.000 into a whopping \$1.620.707. A lot better than Brittany, who had the best timing in the world!.

How's that possible? Well, all those months that Tiffany and Brittany were waiting for the 'perfect' (or worst) moment, Sarah got an

average of 7% or more on her investments, while the two other investors only got their savings account returns of 3%. We simply cannot ignore the effect of compounding that occurred during that time. It is an often heard mantra in investing circles: **“Time in the market beats timing the market.”**.

The best strategy for a long-term stock investor is therefore that of Sarah. This is called Dollar-Cost Averaging (DCA), or Euro-Cost Averaging

for us here in Europe. It implies investing the same amount of money each month and buying the same assets with it. Maybe one month the price is high and you get less than the next month where the price is low, but over time, this averages out. You therefore remove the risk of (mis)timing, and you don’t stop your money growing and compounding in the months (or years) that you’re waiting for ‘the right moment’.

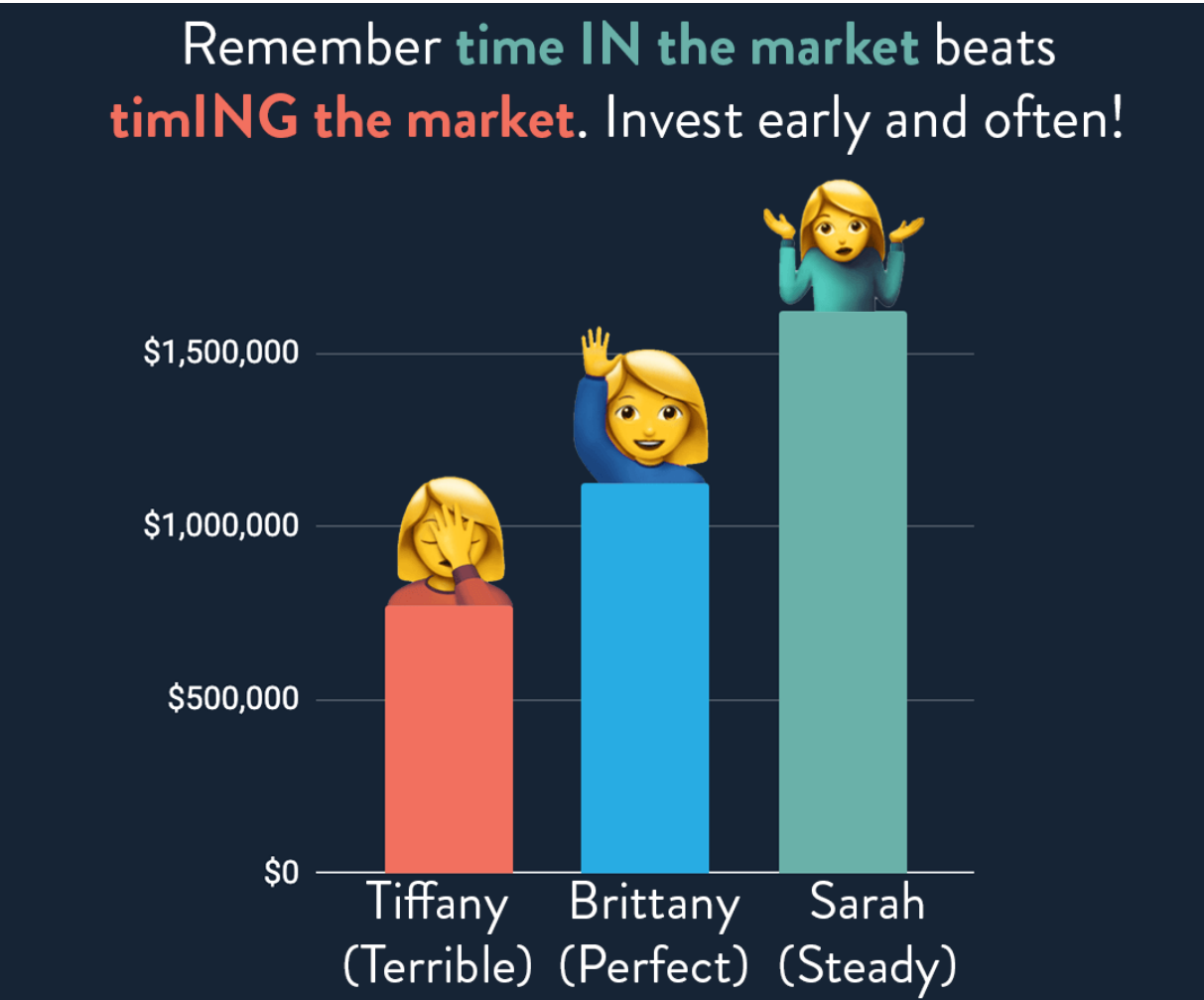


Figure 12. Time IN the market versus timING the market. Image by [Personal Finance Club](#).

## 2.1.9 Compounding

It is time to wrap up this rather lengthy chapter on investing, by talking about compounding. A famous quote often wrongly attributed to Einstein goes like this: *“Compound interest is the eighth wonder of the world.”*. Regardless of who uttered those words, compound interest can be seen as a wonder indeed. To understand why, let’s take get some papers.

Betlem (2019) explains it well in an article. Imagine having a piece of paper of 1/100th of a centimeter thick. If you stack 50 pieces of top of each other, how thick is that pile? It probably won’t surprise you the answer is 50/100<sup>th</sup> cm or half a centimeter.



Figure 13. A stack of papers - Unsplash

Now, imagine having one sheet of paper of the same thickness. Assuming it would be very large and you’d have enough energy available to fold it 50 times, how thick would the result be?

Take a guess. This question is very hard to

get right, because humans are very bad at understanding and estimating exponential growth. The right answer?

About 112 million kilometers. Don’t believe me? Put “0,0001 \* 2<sup>50</sup>” in your calculator. For your reference, the moon is about 384 thousand kilometers from the earth. So, we’d have about enough to go to the moon, back to earth and back to the moon again.

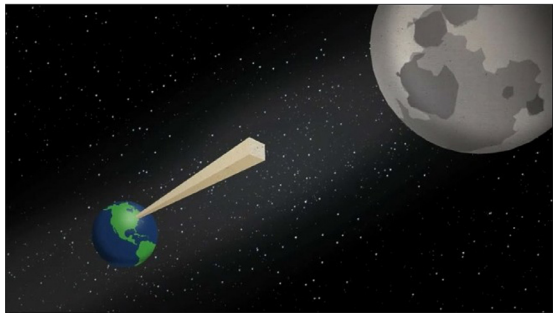


Figure 14. To the moon! - Image by [TED-Ed](#)

Saving your money without getting any return on it can be compared to stacking those papers. Your savings will grow over time, just very slowly, without accounting for inflation and taxes.

Investing your money is like the second example. Your pile of papers grows way more rapidly, albeit sometimes growing rapidly and sometimes decreasing in size. However, with investing, we don’t double our investments every year, like in our folding example. The conservative estimate of 7% a year, means that our money doubles about every 10 years. Why? Because of compounding. Let’s say



you invest a €1.000,- for 7% a year. After the first, you'd have €1.070,-. But now this €70,- that you made, will start creating more on its own: the following year you receive 7% over €1.070,-, which is €74,90 instead of the €70,- of the first year. This €4,90 extra, is the effect of compounding, of interest on your interest! This seems minor at first, but it does stack up massively over time.

Let's take a look at the following picture that Betlem paints in his article "Laat me je overtuigen om te gaan sparen" (2019).

Let's say you start saving and investing at 25. Like a smart investor, you Dollar-Cost Average. Let's say you stop when you reach 65. We'll

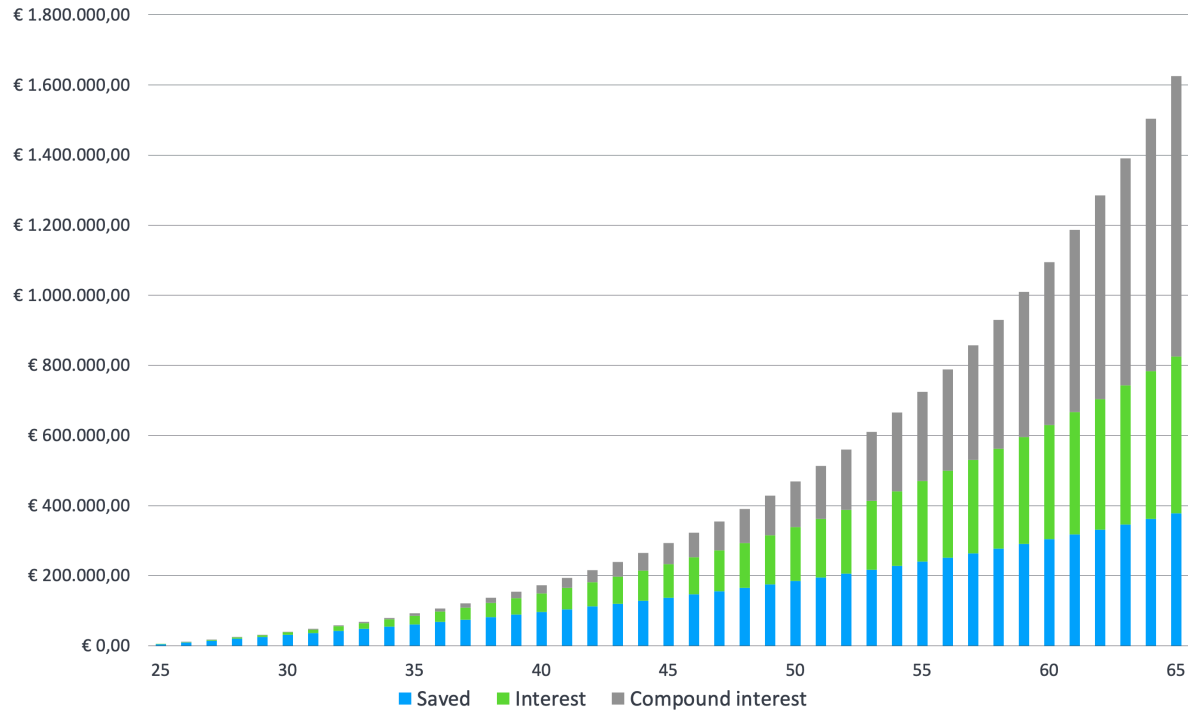


Figure 16. A life of investing, visualized by Aaron Boogaard

Start age	25
Finish age	65
Yearly return	7%
Yearly salary increase	3%
Starting salary	€ 40.000
Saving as % of salary	12%

Figure 15. A life of saving and investing assume you get an average return of 7%. Furthermore, we'll assume a starting salary of €40.000,-, which increases with 3% each year. Lastly, you'll save and invest 12% of your salary, increasing the € amount each time you get a raise.

Over these 40 years, you'll save and invest €377.584 (the blue bars figure 16). But, what will the amount in your investing account be

by 65? A whopping €1.625.900. 77% of all the money in there, came from investing. To be more precise, it came from interest and compound interest. If we break these numbers down into interest and compound interest, we see the power of the latter. The amount of direct invest we received on our savings of €377 thousand is represented by the green area in the chart: €448.259. Now for the biggest one, the compound interest. This amounts to €800.056, the gray area in the chart. So, 23% of our wealth comes from saving, 28% from interest and 49% from compound interest!

We've now seen the power of compound interest and exponential growth. They are available to all, but their effects get way stronger over time. Therefore time, and patience, are the most important things for any investor. Especially those with a long time horizon, such as our target group, stand to benefit greatly. It is important that they don't interrupt the compounding process unnecessarily. See also: volatility and emotion of the previous chapters.

The graph also shows us why investing long-term is so hard. In the first years of our investing-lives, we barely seem to make any progress at all. Exponential lines seem linear at first (this is also why humans are so bad at estimating what impact technology will have over a long period of time).

At 35, after 10 years of investing, it doesn't feel like we've made much progress at all. Only at 45, after 20 long and hard years of saving, investing and probably one or two stock market crashes, have we finally accumulated more wealth by investing than what we've put in by saving. The effect of time is the most clear in the last 10 years (figure 17):

	55	65	Difference 55-65
Saved	€ 240.013	€ 377.584	€ 137.571
Return	€ 484.809	€ 1.248.316	€ 763.507
Total Wealth	€ 724.822	€ 1.625.900	€ 901.078

Figure 17. The influence of time

In the last 10 years, our savings only increase by about €138 thousand, while our investing returns are about €764 thousand. What a difference compared to our younger years.

Time really is the most important factor. Even the legendary Warren Buffett made 99,7% of his wealth after his 52<sup>nd</sup> birthday, according to Forbes (Rittenhouse et al., 2021). No one doubts Buffett is a great investor, most likely the greatest, but we can't overstate how important time is here. Buffett started when he was 11 and at the time of writing he is 90 and still investing. 79 years of compounding does wonders.

That is why this thesis revolves around young adults. They have the opportunity to set



themselves up for life, by getting in the right habits today, starting early and never quitting. The earlier you start, the better.

### 2.1.10 Tips

Summarizing the learnings of this chapter, we can give the following tips and best practices:

- Have a safety net
- Pay yourself first
- Saving = income - ego
- Invest what you don't need now
- Co-own companies by owning stocks
- Share in their profits
- The market grows over time
- Because earnings grow and because the economy grows
- There is an important difference between individual stocks and 'The Market'
- The value of any company is the combined value of 1) its existing business persisting into the future, and 2) a speculative component that represents the market's guesstimate of the present value of future growth."
- Know the difference between passive and active investing and find a fit for you
- Don't let volatility scare you and cause you to sell at the worst moment
- Understand the power of compound interest.

- Never interrupt compounding unless you absolutely have to
- It is not going to be a smooth ride
- Understand the power of time and patience
- Time in the market beats timing the market

### Context Research

## 2.2 THE PSYCHOLOGY OF BEHAVIORAL CHANGE

### 2.2.1 Introduction

Starting with investing requires a change in behavior. It is therefore interesting to review relevant literature on behavioral change, a topic with plenty of research into it. Designing for behavioral change is difficult, as it is hard to predict if your intervention is effective. The target group of this thesis is already motivated to start investing, as they have expressed interest in investing and are already working and saving. However, most need something to pull them across the line, to finally incentivize them to actually start.

### 2.2.2. Investing and behavioral change

According to Fogg (2009), a behavior is something that someone might do. As there are many things people can do, and people differ a lot, it is no surprise that changing behavior by design is difficult. There are many interesting theories into behavioral change. To name a few: The Transtheoretical Model of Behavioural Change (Prochaska et al., 1992, p.

1103), the theory of Planned Behaviour (Ajzen 1985, 1991; Ajzen and Madden 1986) and the Behavioural Model (Fogg, 2009).

Prochaska and DiClemente wrote plenty about the Transtheoretical Model, or the Stages of Changes (SoC) (Prochaska 1984; Prochaska and DiClemente 1983; Prochaska et al 1992). This cognitive model places individuals in one of the six stages, which represent how motivated, or how ready they are for change. According to Webb et al. (2010, p. 1890, these changes are "(i) pre-contemplation, (ii) contemplation, (iii) preparation, (iv) action, and (v) maintenance." The rationale here is that individuals at the same stage should have similar problems. The logic then follows that the same kind of interventions could help those in the same stages. I argue that individuals in the target group are mostly in the contemplation and preparation stages. They either contemplating starting with investing, or are already preparing themselves by reading about it, opening a broker account, listening to

a podcast or asking their friends about it. The main issue for them is to take the step into the action phase.

Another relevant model is the Behavioural Model by Fogg (2009), states the following: *“a new behaviour is developed when people feel motivated up to a certain degree and take action to include that certain behaviour in their everyday life. There are three things to change a particular behaviour: Motivation, ability and a trigger.”*.

Fogg describes motivation as *“extent of willingness that carries out a behaviour”*. Regarding the target group, it is safe to say they have an above average motivation. They are raking in salaries, seeing the ineffectiveness of savings accounts and interested in investing, quite often by the news and peers around them.

The second factor is ability, about which Fogg says: *“means making the particular behaviour easier to do or simpler”*. On the technical side of investing, there shouldn't be a problem. A revolution in apps has made investing easier than ever. User Interfaces look sleek (in the U.S. more so than in Europe) and signing up for a broker doesn't require too much work or a large starting sum. There is more to it than just technical ability, though. That is to say, it doesn't matter if a behavior is easy to do, when

you do know what to do exactly. Users have to figure out which steps they should take, from picking from all the available brokers, setting up an account and selecting what exactly to invest in. As demonstrated in chapter 2.1, there is a lot to learn about investing, which might be overwhelming to aspiring investors.

Lastly, there are triggers. Fogg again: *“... something that calls to action. The triggers can be natural or induced depending on the levels of motivation of the person on those desired behaviours.”*. Triggers are what we'll design in the design solution, further down the line. Anecdotally, triggers that I have personally found to help people start investing are peers being interested in and talking about the topic of investing. The realization of what investing can do for you and your future also seems to help a lot. More on this later.

## Context Research

# 2.3 EXISTING SOLUTIONS

## 2.3.1 Brokers

The first category of existing solution is that of brokers. As explained in previous chapters, a broker is the party that allows individuals to invest in stocks. The largest players differ depending on where you are in the world. The four largest brokers in the U.S. are Charles Schwab, Fidelity Investments, E\* TRADE (now Morgan Stanley) and TD Ameritrade (Ross, 2020). In The Netherlands, some popular names are: DeGiro, eToro, Binckbank, MeXeM, Trading 212 and BUX X. Each platform competes in different ways, from user interface, to fees and much more. Inertia plays a role here, as it is a bit of an effort to switch brokers later (just as it is switching banks).

## 2.3.2 Investing apps

Apps have made it stunningly easy to invest for retail investors. There are many different ones, all with their own unique angles. Some round up your purchases to full euro amounts (€1,80 become €2,00, and the €0,20 goes to

your investing account (Acorns in the U.S. and Peaks by Rabobank in The Netherlands). Investr and Wealthbase are apps that use gamification and social features to make stock picking more fun. They don't stroke well with this thesis' narrative of a long-term investment view. Robinhood is an app that has gotten a lot of (negative) PR recently. Yet the app offers a great UI and fee-less trading, just like Webull. Furthermore, there's Stockpile that allows you to “give a gift card that's redeemable for stock, so it may be a way to get a younger relative into investing in a fun way.” (Royal, 2021).

In The Netherlands, the most popular apps are those of the big brokers and the national banks. Other noteworthy apps are for example Plus500 and BOTS, which allows you to automatically follow the trade of a bot.

## 2.3.3 Wealth managers

Some apps take a more holistic approach to finances. Instead of just focusing on investing, they help you budget, save and invest. They also help you track your pension (401(k)'s and such). Again, most great examples come from the states: Wealthfront, Betterment and M1 Finance. European apps could learn quite a bit from their U.S. counterparts. While these wealth management apps are great, they are mostly suited for those that already have a large part sorted out, in terms of why and how to invest. They are great for tracking process, but not as much for understanding the required long-term mindset.

2.3.4 Informational

Another group of institutions that tackles part of the problems are what I call “informational platforms”. There is a fine line between them and the educational platforms of chapter 2.3.5, but more on that later. Informational platforms are platforms that provide information on topics around investing. There are a great many available, as investing is an hot (and potentially profitable) topic. Most of these platforms make money through advertisements and kick-back fees (affiliate links), though some also offer content behind a paywall or sell courses. The most well known informational platform for investors is probably [Investopedia.com](#), who also has their own educational platform Investopedia Academy where they sell courses

on investing, starting at \$199,-. Other great informational platforms are [Visualcapitalist.com](#) and [Listenmoneymatters.com](#). The great many books that are written on topics of investing and personal finances also mainly fall into this category. A great example of a book that teaches a mindset rather than just giving information is The Psychology of Money by Morgan Housel. National institutes like the Nibud are also great to learn from.

2.3.5 Educational

The last category of existing solutions is the educational platform. More than just giving information, educational platforms mainly aim to teach. Apart from the afore mentioned Investopedia Academy, other platform is [NGPF.org](#) (a non-profit that teaches financial literacy in the U.S.). Lastly, there is a wealth of information available on YouTube, as well as many courses on websites like Udemy, Coursera and Teachable.

2.3.6 Conclusion

As you can see from the sum-ups in this chapter, to is no shortage of great resources online. The issue, as with most online things, is not availability, but choice. User interviews later will show us that users are still doubtful and still not starting with investing long-term, despite (an maybe even because of) this great offering of information and apps. Let us then

create an overview of where all solutions sit and what is lacking in that spectrum.

We do this by choosing two relevant axes to compare the solutions on. The vertical axis ranges from “Mindset (psychology) first” to “Money (finances) first”. Solutions on the top try to teach their users all they need to know about the mindset and philosophy of investing. On the other side we have solutions that tell their users “you don’t need to understand it, just let us handle the difficult parts for you”. Note that neither of these are right or wrong per se, just different ways of achieving the goal of letting people get started with investing. Right in the middle of these extremes we find the solutions that simply offer the tools and leave the choices to the users.

The horizontal axis has on the left side solutions that let users act completely Independently, characterized by users thinking “I make my own choices!”. On the far right side of the spectrum, we have Supported. These are solutions that make users feel like they are not alone in their quest. This can be either by social features or by taking tasks out of the hands of users and doing them for them. In the middle we have neutral, solutions where it is up to the user to be independent or supported.

As demonstrated by this overview, an interesting gap exists in the top right corner. No solutions seems to focus on the mindset first and make users feel supported.

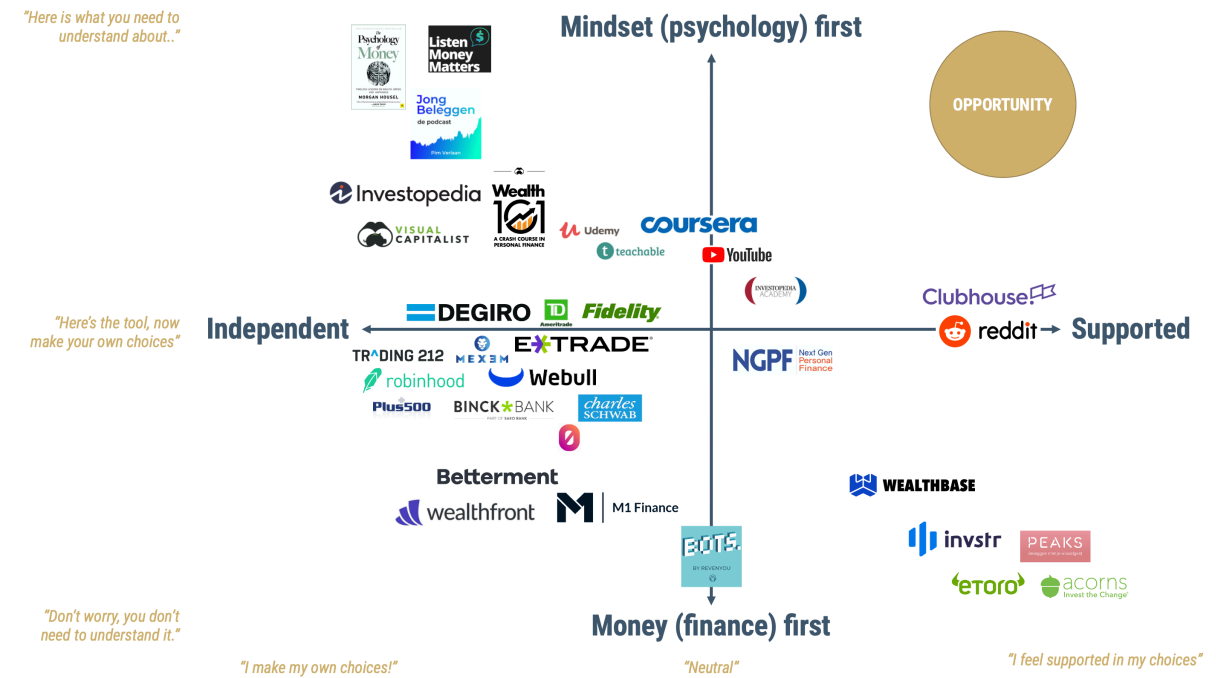


Figure 18. Overview of the competitive landscape

## 2.4 TREND ANALYSIS

### 2.4.1 Introduction

To get a better grasp on the context, a trend analysis has been conducted. A list of trends has been created, going off different sources. Trend reports by large consultancies played an important role, as well as talking to industry experts and my own work in the field. The DEPEST method (Aguilar, 1967) has been used to make sure all areas were covered. In this chapter, the most relevant trends and clusters are being shown.



### 2.4.2 Technology in Finance

The FinTech trend has been around for a long time. What we do see changing is customer expectations. They are *“less willing*

*to put up with the sometimes glacial pace and bureaucracy of certain traditional financial services.”* (Deloitte, 2018). Customers expect seamless online experiences everywhere, as well as from their banks and investing apps. We see user interfaces are far from always up-to-par. In the digital era, much is driven by the user and its experience. Moreover, there is a massive increase in investment app use, driven perhaps by a combination of extra pandemic time and stimulus money. In the first half of 2020, investment app use has increased by 88% (Hartery, 2020). The increasing adoption of block-chain technologies can also not be overlooked.



### 2.4.3 COVID

The global pandemic obviously has a large impact on the world, and plenty has been written about it. A year into the pandemic at time of writing, vaccinations are slowly starting. For the near future, it seems like more of the same is in store for us. COVID has also accelerated many already on-going changes in the world, such as digitalization. We’ve seen virtual experience become more important, remote working is the standard and will likely stay in a post-COVID world. We’ve seen a growing love for local, as governments and companies alike start to question globalized



logistical chains.

### 2.4.4 E-Learning

E-learning technologies have developed rapidly, even more so due to COVID. Book, pen and paper are becoming more obsolete. Apps, animations, gifs and AI run the show now, making sure that for each student there is something they like. And though people still prefer to meet in person, technologies do enable more and more ways of creating meaningful interactions online. Deep diving into data means that online courses can be



optimized, just as websites have been for a while.

### 2.4.5 Productive Free time

Many feel less productive during the pandemic. Some hobbies are impossible to do, depending on the restrictions. This, in combination with the additional “free” time, leads to people picking up more productive hobbies, such as learning a new skill. Great example is the massive growth of the platform MasterClass, where you can learn skills taught by celebrities.



2.5 PERSONA



Figure 19. Persona of Martha Mertins

This persona (figure 19) introduces Martha Mertins and gives insight into the pains and desired gains of the target group. Furthermore, we see some jobs that Martha is trying to get done, as well as the reality she faces whilst trying to complete these jobs. Lastly, we see some interesting quotes and context to understand Martha and her situation better.

2.6 INVESTING BEHAVIOR OF YOUNG ADULTS

In this chapter, trends about and insights into the target group are given, with regards to investing and their investing behavior and preferences.

Morning Brew (Desjardins, 2019) did a study into investing of millennials (classified as 18-35 years in age) living in the US, Canada and Europe. They surveyed 9800 people. Most of them were either full-time employed (68,1%) or student (27,6%). Important to note that the people survey visited Morning Brew, a website and newsletter for daily market updates. Unsurprisingly, those that visited their website were mostly already investing (89%). Their financial goals differed vastly, they stated them as follows:

- “23.8% – Earning a degree
- 21.5% – Buying a car
- 19.6% – Getting married
- 19.0% – Buying a primary home
- 7.3% – Opening a business
- 6.4% – Having a child
- 2.3% – Buying a vacation home”

When asked about their portfolio size, they answered:

- “18 to 22 years old: \$1,001 - \$5,000 (31.7%)
- 23 to 27 years old: \$10,001 - \$50,000 (36.7%)
- 28 to 35 years old: \$50,000+ (42.0%)”

This makes a lot of sense, as the older you are, the more time you have had to amass wealth. If you were investing since a young age, this also means the compounding effect has had more time to work its magic.

Technology stocks did best (49,7%), followed by healthcare, energy and real estate. A possible explanation is that the target group buys stocks of companies they know and use in their lives. Another explanation could be that they work disproportionately more at tech companies, that give stock options to employees.

Millennials also said their level of expertise is pretty low, “with only 18,3% of respondents

expressing that they had high confidence in their own investment abilities.” (Desjardins, 2019). This statistic, even among those that mainly are already investing, is an interesting one. It shows plenty of opportunity to give more knowledge and confidence to young investors.

They prefer a human financial advisor (70,2%) to a robot advisor (29,9%) (Desjardins, 2019). This shows a clear preference a personal touch and human-to-human interactions.

YCharts conducted a research on 600 people, of whom 80% were millennials (YCharts, 2018). Research conducted by YCharts finds that millennials are pretty independent, with 83% saying they are managing their investments themselves. Most use “a self directed brokerage account (41,1%), followed by investing apps (31,2%) and an advisor-directed brokerage account (11,4%).”. This shows a need for control the target group might have. It fits with the image of a generation that is used to simply “Googling” how things work.

Lastly, Cudmore et. al (2010) already wrote about the idea of binding the millennial generation to banks by offering financial literature programs at a young age already. An interesting idea for sure, though loyalty programs are far from certain to work.

Finally, investing apps and social media are enabling some of the craziest recent movements in stock prices. The massive number of new retail investors, enabled by investment apps without fees like RobinHood, reached mayor headlines when all rallying behind ‘meme’-stocks such as GameStop, AMC and Nokia. Through social media, such as the platform Reddit, users motivated each other to massively buy and hold certain stocks. Some where hoping to cause a short squeeze, whilst others didn’t understand why and were just “in for the meme”. The large influx of new retail investors, especially during the pandemic, cannot be over looked. Young, retail investors will be tomorrow’s money and their market become a large battle field between banks and AMs, all vying for their attention.



Figure 20. Photo by [Clay Banks](#) on [Unsplash](#)

# 03

## USER RESEARCH

This chapter gives a detailed description user research activities. The aim of the user research is to understand the target group, which problems they encounter and what would be required to solve these.

### 3.1 Introduction

### 3.2 Online Survey

### 3.3 Hypotheses and Assumptions

### 3.4 User Interviews

### 3.5 Expert Interview

### 3.6 User Journey Map

### 3.7 Conclusions

### 3.8 Reflections

# 3.1 INTRODUCTION

User research was conducted to get a grasp on how the target group perceives investing and what they encounter in their journey to start (and stay) invested. The main goal was to answer the research questions in clusters I (target group), IV (competition) and V (societal).

The initial online survey conducted help gain a better grasp at how to scope the project and to define the target group by specific characteristics.

Next, initial hypotheses and assumptions were created to get a good grasp on the root of the problem the target group is facing. These were then tested in user interviews.

Next, an expert interview was conducted to gain more knowledge, as well as to better understand what could and would not work for the target group.

Then, a user journey map was created to get a clear overview of the steps in the user journey, as well as the emotions experienced throughout this process.

The chapter is finalized by the conclusions and reflections.

# 3.2 ONLINE SURVEY

## 3.2.1 Introduction

An online survey was conducted to get a good feel for what motivates the target group. In this chapter I discuss the setup, the selection filters, interesting results and insights.

## 3.2.2 Set-up

The online survey was set up to follow this general structure: general information > saving > relationship with money > investing > existing solutions (optional) > sustainability & social impact > contact (optional) > end. The survey was created on the platform Typeform. The benefit of using Typeform was that it allowed for the creation of logic jumps inside the survey. For example, individuals were asked about if they had already invested in the past. If they did, they'd get questions about what they did before, but these questions were skipped for users that answered negative. In this way, a lot of relevant questions and follow-ups could be asked, without taking too much time or annoying visitors with questions that were not relevant for them.

A link to the survey, accompanied by an engaging text, was posted on LinkedIn. The survey has also been shared among friends, family and in TU Delft WhatsApp groups. People were also asked to respond to the survey after a series of Instagram Stories, in which viewers were asked to make an estimation about how much they should save and invest to become millionaires by 65.

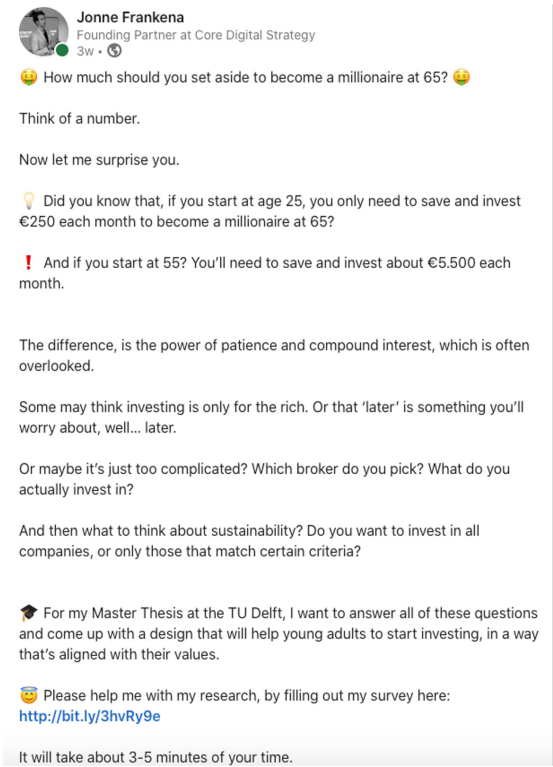


Figure 21. LinkedIn post referring to the survey



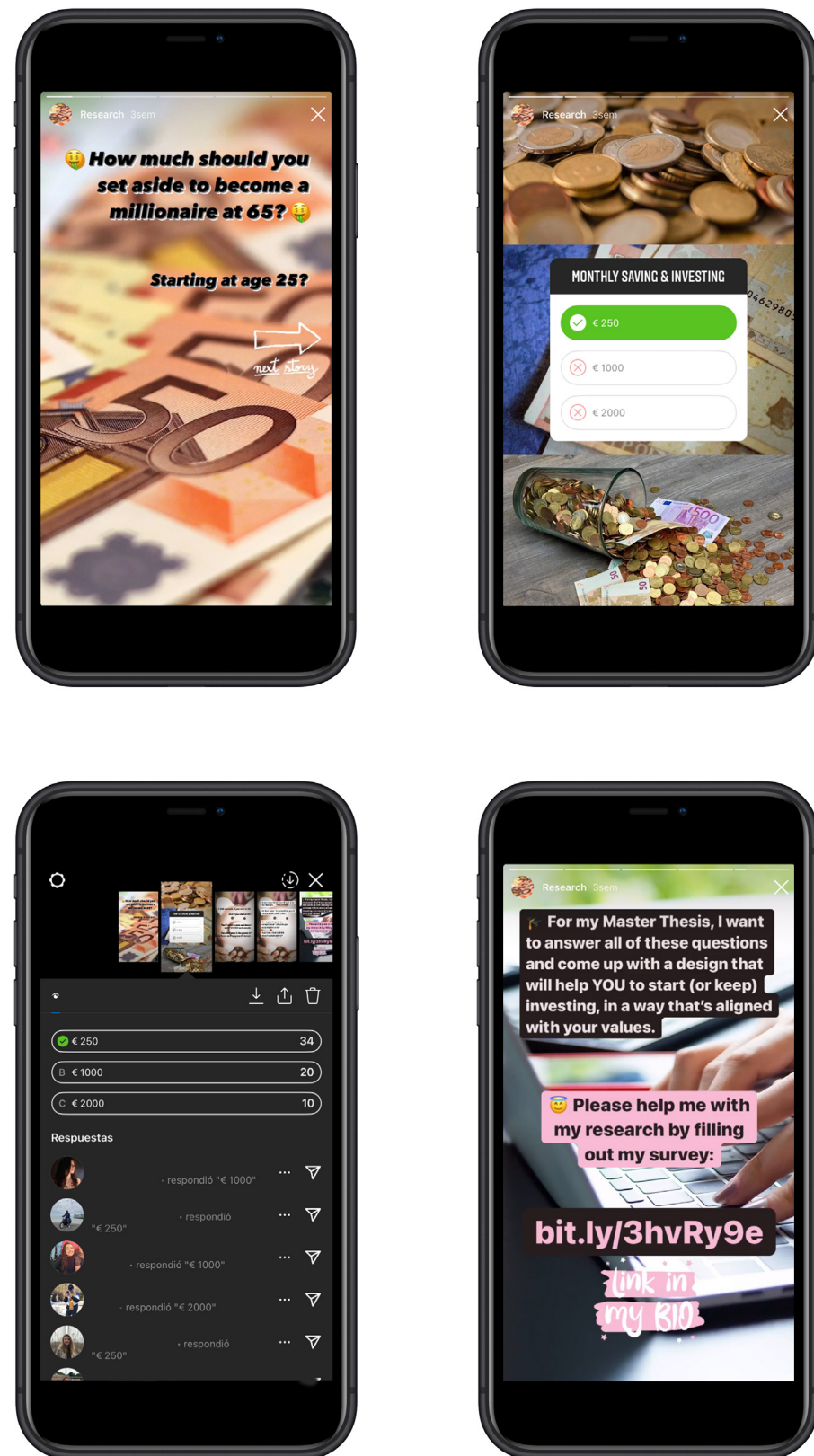


Figure 22. Instagram posts referring to the survey

### 3.2.3 Results

The survey was well visited, with 390 views, 209 starts and 154 responses, being individuals that fully completed the survey. The figure below shows the age of the respondents.

75.3%	23 to 27	116 responses
7.8%	28 to 35	12 responses
6.5%	45 to 54	10 responses
5.8%	18 to 22	9 responses
1.9%	36 to 44	3 responses
1.9%	55 to 64	3 responses
0.6%	65 to 74	1 response
0.0%	15 or younger	0 responses
0.0%	16 to 17	0 responses
0.0%	75 or older	0 responses
0.0%	I prefer not to answer	0 responses

Figure 23. Age of respondents

Due to how the survey was spread, the majority of the respondents were already fitting for the target group of this thesis, being 'young adults'. Desk research and the results of this survey, resulted in specifying the target group further. It was decided to focus on those between 23 and 35 years in age, as they were not only the majority within the 'young adults' group, but also fit well in another criteria: income. At the age of 23, most have already completed their Masters or are about to. Those individuals are now entering the job market, or have been working for some years. They are receiving salaries, most likely a large increase in income compared to the one they had being students.

Furthermore, only individuals that were already saving a part of their monthly income were selected, as this is a requirement to start investing. Those not saving could also be focused on to convince them to start, but that is a whole thesis topic on its own. After applying the filters of age 23-35 and 'are you currently saving' = yes, we are left with 102 respondents. The following results and insights that are about to be shown, will be based on these 102 individuals. As a side note, please remark that no statistical analysis has been applied to these results. They serve solely as inspiration and insight creation for the design process that will follow later on in this thesis. Survey results were also used for user interviews later on, if those users had previously also filled in the online survey.

Of the target group, most live either with their partner/spouse or with roommates/friends. Of

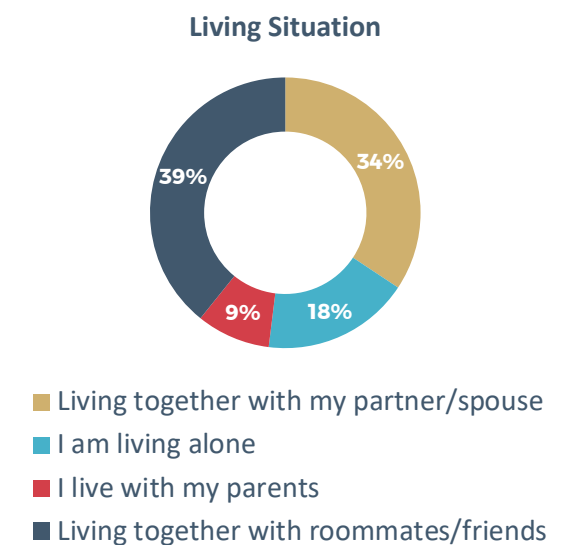


Figure 24. Living situation



About investing – excluding people that already invest. N=52

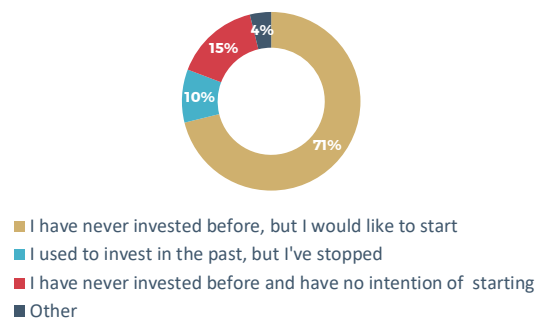


Figure 25. About investing

those that said they were not investing yet, 71% said they would like to start, with an additional 10% stating that they have actually stopped. Of those that were investing, most said it was

Why are you investing?

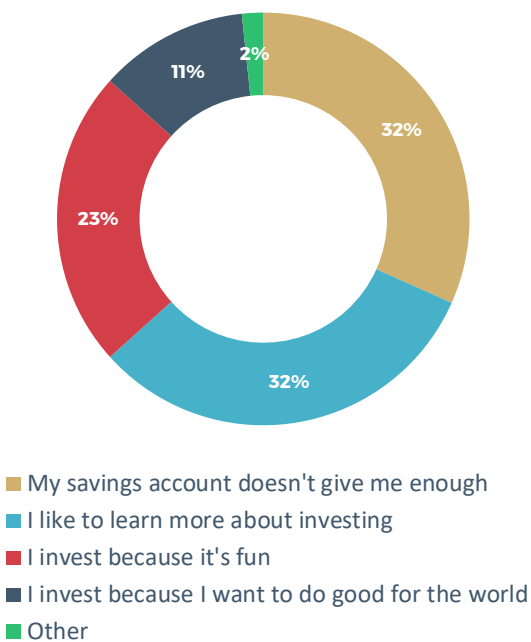
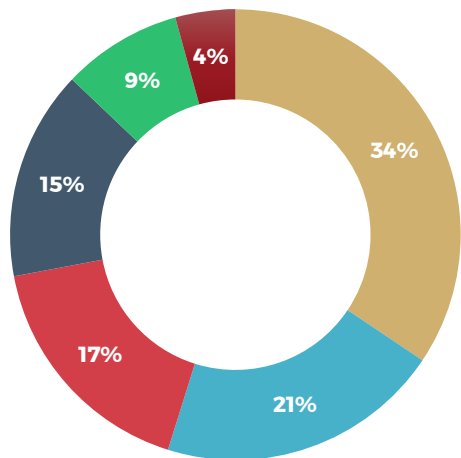


Figure 26. Why are you investing?

either because of low interest rates on savings accounts or because they wanted to learn more about investing. Another reason were because it was fun. Only 11% said they were investing because they wanted to do good for

the world (sustainable investing). Of those that indicated they were not investing,

Why are you NOT investing?



- I don't know enough about investing
- I want to, but I don't know how to start
- It's risky / scary
- It's too complex
- Other
- Ethical / ideological concerns

Figure 27. Why are you NOT investing?

34% said they didn't know enough about it, a solvable problem. 21% said they wanted to, but didn't know how to start, something that a design intervention could also tackle. Furthermore 17% deemed it too risky / scary and an additional 15% said it was too complex. These insights will all be taken into the design phase.

Those that weren't investing yet were asked

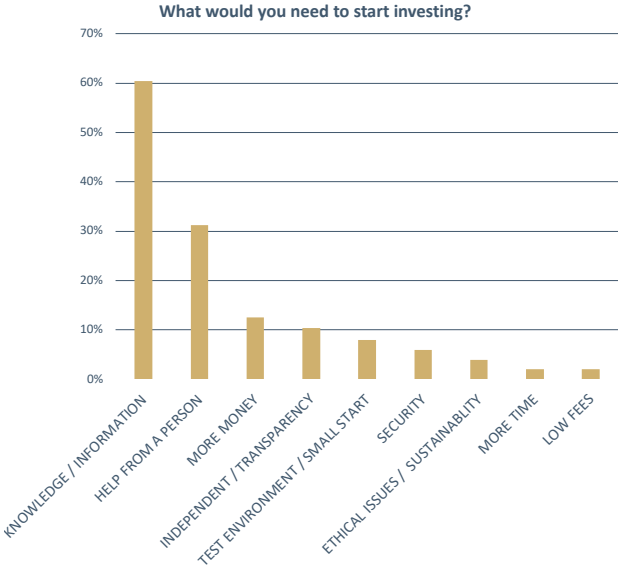


Figure 28. What would you need to start?

what they would need to start investing. The most overwhelming answer was more knowledge or information on the topic (60%). Another 32% said they wanted help from a person, with an additional 10% stating they needed the information to come from a independent and in a transparent way. The third most answered "more money", is not something that this thesis will help with. Some interesting quotes:

*"A clear explanation /process from an independent body. Most literature assumes you already know a good deal about /have a clear interest in investing and have already made up your mind and are willing to put a lot of time and effort in it. Or it comes from parties with a stake in the business who want to have you as a client, so there's a trust issue."*

*"A guide on how to start, what all the words mean, what the risks are and maybe an easy tool that will guide me through it."*

*"Get a simple explanation from someone I trust. Since I don't know anything yet I find it hard to know to what extent you can trust a party that arranges everything for you."*

The social and environmental impact of investing doesn't seem to be very high on the priority list of the target group. When asked whether they wanted a greener planet or to make more returns, the amount of replies for the greener planet was only slightly above half (58%). This was a lot more than the overall data set, though (39%).

What would you rather have?

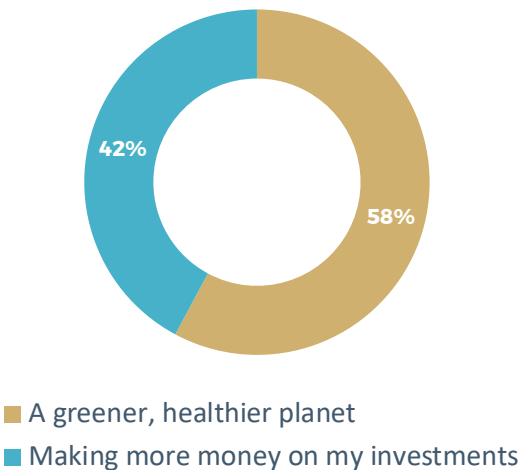


Figure 29. Green vs returns

When asked about their actual sustainable

behavior, we see a different picture. Only 27% said they were currently powering their house with clean energy.

Lastly, there is a big difference between saving

Are you powering your house with clean energy?

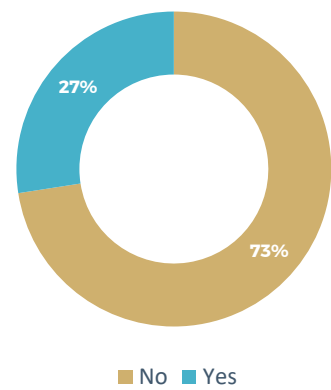


Figure 30. Clean energy

and investing in how the target group is brought up. 74% were taught about saving when they were young, however only 25% were taught about investing. This clearly shows that most of us learn about saving whilst we grow up, but the same cannot be said about investing.

User Research

# 3.3 HYPOTHESES AND ASSUMPTIONS

## 3.3.1 Interaction Vision

After the initial survey and desk research, an interaction vision (Pasman et al., 2011, p. 151) was formulated. This is first understanding of the problem, followed by a desired human-product interaction that would (partially) alleviate the problem. Trying to start investing long term is like a young man standing on a

road. The road is long and stretches onward, through a dark forest, spiraling up to the top of a mountain. On top of the mountain is the goal of the user: starting with investing long-term. However, the road ahead of him is littered with challenges, that make it hard to see ahead. These are represented by the trees. There is biased information, headlines in news



Figure 31. Interaction Vision.

papers, a lack of transparency, the opinions of others and advertisements by companies that have something else than his best interest at heart. He is also wearing a heavy backpack. The backpack is filled with his pre-existing (mis)conceptions about investing, saving and finances. They are weighing him down, making his journey more difficult, or even fully stopping him from moving forward.

To help our user, someone should help him carry the load in his backpack, or change it for something lighter. Someone should help him navigate the road ahead, point him where to go. You can't do the walking for him. All you can do is give him the right information, teach him the right principles and try to guide him back to the road if he goes off-track.

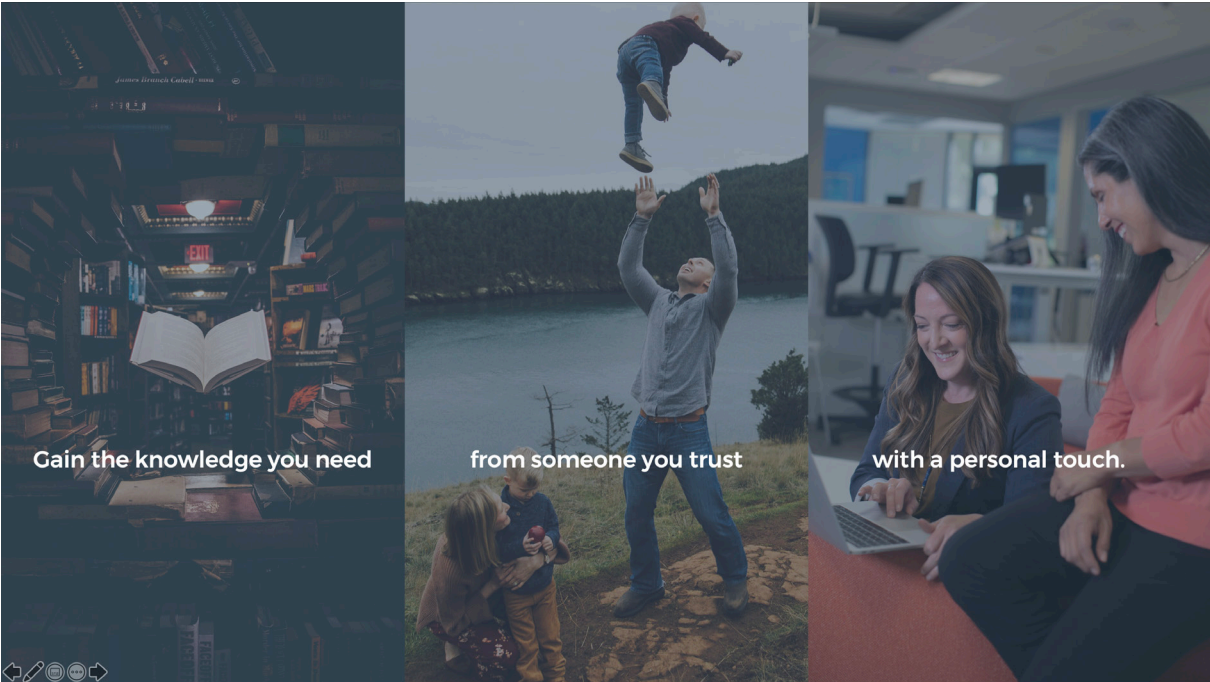


Figure 32. Three required elements in a successful solution

### 3.3.2 Hypotheses

This interaction vision, together with all the insights gathered so far, lead to the formulation of a hypothesis. It was argued that the main issues were the lack of information and knowledge, a lack of transparency as to the source of information and a lack of support and friendliness. To solve these issues, the hypotheses were that users needed to be given the knowledge they needed, from someone they trusted, with a personal touch.

From here on out, an initial idea was formed, inspired by the platform MasterClass. This is an online platform where celebrities teach their craft online through online courses. Gordon Ramsey teaches cooking, Natalie Portman teaches acting, et cetera.

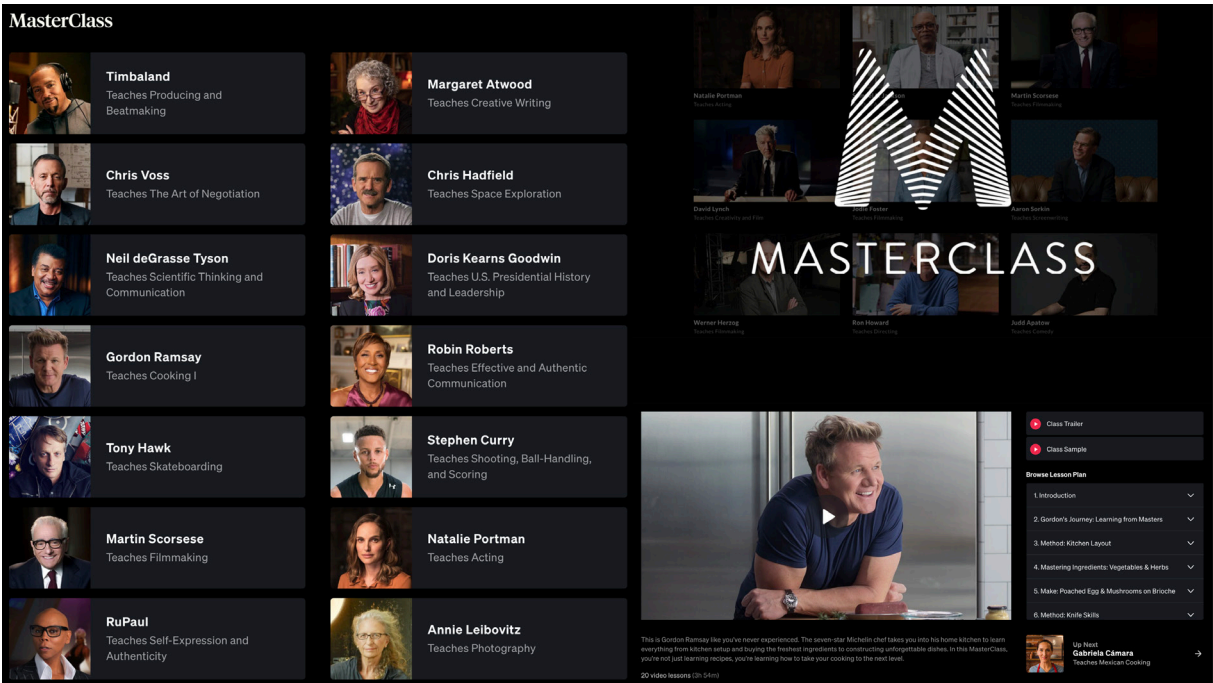


Figure 33. A snapshot from MasterClass.

The idea was then to apply this way of teaching to starting with investing long-term. One should educate people about starting with investing, coming from a trustworthy independent source. Knowledge should be taught through having the users experience fun while learning. They should get the feeling that they are not alone in their journeys and have the possibility to interact with peers that face similar roads. We should offer education, exercises, a dedicated community & all the guides needed to get started.

### 3.3.3 Assumptions

Before jumping straight into designing said solution, it was time to talk to the target group and validate the idea. For this purpose, a list of

assumptions was created, which is as follows (note that 'TG' here stands for Target Group):

1. TG wants to feel more confident about investing before they start
2. TG wants to gain more knowledge about investing
3. TG would like to be educated on investing
4. TG prefers actionable knowledge, tailored to them, as opposed to 'broad' or 'general' information
5. TG wants to know the deeper knowledge, the 'why' of investing
6. This knowledge should come from an independent / trustworthy source
7. TG distrust banks / brokers as they stand to gain from them investing
8. TG would like to not feel alone in figuring all of it out



9. TG would like to have the option to learn about investing with peers, as opposed to doing it all alone
10. TG would like to have a dedicated community they can fall back on or discuss with
11. TG would like to optionally have supervision / someone to watch over their shoulder with them and give advice
12. TG would like to learn by doing
13. TG thinks 'fun' is a required aspect of learning to start investing
14. TG thinks learning in a safe and controlled way is required
15. TG would like guides that would help them to get started with investing
16. TG would like investing to be engaging instead of boring
17. TG doesn't want advise what to invest in, but advice on how to invest
18. TG doesn't want to pay a % of money invested, as this is what brokers do, and will create mistrust.
19. A freemium model works, in which the basic parts are free and additional content paid

These assumptions were then clustered in 8 key themes, around which the interview questions were based. The themes are: Confidence, Knowledge, How to learn, Trustworthiness, Social Aspect, Advice, My solution and Extra.

## User Research

# 3.4 USER INTERVIEW

### 3.4.1 Set-up

Seven users from the target group were interviewed through Zoom. With their permission, the conversation was recorded for later reference. The goal of the user interviews was to validate the assumptions of the previous chapter, and to gain extra insights. The seven users were selected from the target group and all had previously replied to the online survey too. Their answers there were also used as input for additional interview questions, where relevant. The interview questions, notes and recordings can be found in Appendix B.

Again, it is noted that a N of 7 is not statistically relevant in any way. These interviews served as qualitative research material, not quantitative. Insights taken from it will be valuable to the final design. The (in)validation of assumptions don't necessarily mean they do or don't have a place in the final solution, but they do serve as indicator for what could or could not be used.

### 3.4.2 Results

The full overview of the results and validations per user is displayed on the following page. Here, we'll dive into some interesting results. While analyzing the results, three extra assumptions were formulated, as they came from questions that all of the participants answered. They were:

- TG would like to do exercises to better understand the content
- TG cares about sustainability when investing
- TG doesn't mind sharing their information with others regarding investing, as long as it is equal.

If a participant fully validated an assumption, a score of 1 was attributed, represented by a green square in the image on the next page. For a partial validation, a score of 0,5 was given (yellow) and 0 (gray) for invalidation, or if the assumption couldn't be validated based on the answers. The average of these scores determined the final score and validation.



Figure 34. The validation results from the user interviews

Assumption 4 was only partially validated. It was assumed that users would prefer tailored knowledge to broad, general knowledge. However, most said they preferred first to gain basic, general knowledge, before going for deeper, applied knowledge. One participant described it best: *“I prefer T-shaped knowledge. Broad basics, then deeper into topics of interest.”*.

Some participants were absolutely thrilled by

the idea of not having to learn everything alone (assumption 9): *“Learn with others. I sometimes feel very alone in this process. Thats why I reached out to friends in the same position.”*. However, others stated they preferred to simply learn alone and figure things out at their own pace. Clearly, a successful solution should accommodate both ways.

Assumption 10 was about the community aspect. Many participants didn’t view this

aspect of the solution as desired. The main perceived issue was the size of the group. A large community of perhaps thousands of individuals online, was perceived as intimidating and too big to be of value. One user said: *“Communities are nice only if they are relevant and not too big. I’m on Reddit, but never engage. No relationship with them.”*. Keeping the groups small is thus important, at least if you want people to actively contribute to the group: *“Wouldn’t participate in a larger community. I would just read, not share. In smaller group I would.”*. A third participant gives a suggestion regarding shared experiences: *“I would learn with strangers only when we have had a shared experience together first. For example, people that follow a yoga class together and then stay in touch afterwards to see how you’re progressing.”*.

Assumption 13 and 16 were also invalidated. Participants stated that they did not see investing as boring. Furthermore, they said learning about investing would already be fun because of the topic itself, diminishing the need for gamification and other ‘fun’ add-ons in a later solution.

Lastly, assumption 19 touched upon the potential business model of the solution. Before anything meaningful can be said about this, the solution should be more defined.

Regardless, participants were in general okay to pay for a solution that would help them get started. However, some stated they first needed to see the value up front first (freemium or trial). Others however, said they wouldn’t pay for any sort of information online, as information is freely available (albeit doubtful if from trustworthy sources).

What was validated by these interviews however, are the following points:

People want to:

- Feel more confident
- Gain more knowledge
- Be educated on investing
- Get deeper knowledge too
- Get knowledge from a trustworthy source
- Not feel alone figuring it all out
- Have to option to get mentor / expert opinion
- Learn by doing
- Follow guides that help them start investing
- Advice rather than exact instructions on what to buy
- Doesn’t want to pay a % of investments fee like at brokers
- Make exercises to grasp the content better
- Doesn’t mind sharing information with others as long as it is an equal exchange

# 3.5 EXPERT INTERVIEW

## 3.5.1 Set-up

Hans Betlem was interviewed through Zoom. With his permission, the conversation was recorded for later reference. The goal of the expert interviews was to validate the assumptions of the previous chapter, and to gain extra insights into investing and motivating the target group. The interview questions, notes and recording can be found in Appendix C.

## 3.5.2 About the expert

Betlem started his career in asset management in 1985 at the firm Merrill Lynch. In 2012, he and his team started IBS Capital Allies, a Dutch independent asset management (AM) firm. With about 4 billion euro of assets under management (AuM), they are most likely the largest Dutch AM apart from the national banks. As partner and Chief Investment Officer, Betlem is responsible for IBS Capital Allies’ investment policy and communication about it. Furthermore, Betlem often writes blog

posts about topics regarding investing and youth. For example, blog posts titled: “Let me convince you to start investing”, “For young investors, a stock market crash is a gift sent from heaven” and “Investing is the study of how people behave with their money” (translated from Dutch).



Figure 35. Articles of Hans Betlem on ibsca.nl

Betlem was asked several questions, clustered around the following topics:

- Beginning with investing
- The right mindset

- Advice
- Investing
- The idea

## 3.5.3 Insights

Some insights have already been used in chapter 2.1 about investing. The others are mentioned here:

- Retiring and the future are far away for young people. This makes it negative and pessimistic if you associate this with investing.
- Instead, frame it positively. Primary goal of investing should be freedom. Wealth gives you the opportunity to do what you want, when you want it, how you want it and with whom you want it. Avoid the Rat Race.
- Investing for a ‘goal’ is the worst you can do. Because of the *end of history illusion*. What you want now and in the future is

- fundamentally different.
- Wealth = freedom. Happiness = control over your time. Independent of others
- Pay yourself first. There will be challenges in life, that tempt you to spend (too much). Keeping up with the Joneses. Pay yourself first that, brings discipline.
- The earlier you start, the better. See figure 36.
- Some of the target group might think: “I don’t want to wait being rich until I’m old”
- Young people think (and should think so) they are invincible: optimism bias.
- Most people discover after 30 years that they are slowly killing themselves for a decent salary.
- How to invest depends on your interest level. People should have the right not to be interested in investing. But everyone should still do it.

Monthly savings needed to reach \$1,000,000 at age 65 with a 7% return											
Age	Cost per month	Age	Cost per month	Age	Cost per month	Age	Cost per month	Age	Cost per month	Age	Cost per month
1	\$68	12	\$148	23	\$328	34	\$757	45	\$1,920	56	\$6,673
2	\$73	13	\$159	24	\$354	35	\$820	46	\$2,109	57	\$7,800
3	\$78	14	\$171	25	\$381	36	\$887	47	\$2,321	58	\$9,259
4	\$84	15	\$184	26	\$410	37	\$962	48	\$2,563	59	\$11,216
5	\$90	16	\$197	27	\$442	38	\$1,045	49	\$2,839	60	\$13,968
6	\$97	17	\$212	28	\$477	39	\$1,135	50	\$3,155	61	\$18,113
7	\$104	18	\$227	29	\$514	40	\$1,234	51	\$3,521	62	\$25,044
8	\$111	19	\$245	30	\$555	41	\$1,344	52	\$3,947	63	\$38,939
9	\$120	20	\$264	31	\$600	42	\$1,466	53	\$4,451	64	\$80,963
10	\$128	21	\$284	32	\$647	43	\$1,600	54	\$5,051		
11	\$138	22	\$305	33	\$700	44	\$1,751	55	\$5,777		

Figure 36. The importance of time and starting early.. Savings needed per month at different starting ages.

- After understanding the basics, you can decide yourself to either just follow an ETF, or select stocks or funds yourself.
- Influencers promoting serious topics could work. For example the Instagram of Isabelle Boemeke, an influencer championing nuclear energy.
- Young people want easy to grasp stuff.
- You could pump principles through social media.
- Create a story from “you’re young and you have nothing” to “you want to have control over your own time”. Feelings not facts.
- It’s about learning a process, not having a goal.
- Get a niche of some interesting things. One of which is communication
- People like to make investing sound difficult. But its not.
- Have someone extroverted display the principles in an interesting way on modern forums.
- Don’t use normal faces, use influencers.
- Let every financial institute connect with it.

## User Research

# 3.6 USER JOURNEY

## 3.6.1 Set-up

After the desk research, the survey and the interviews, a clear user journey could be drawn up, identifying pain points and emotions along the way. It was import to get a clear view on how this journey goes, what emotions users experience, where the hiccups are and how can be intervened best with a design solution.

## 3.6.2 Insights

As stated before, users don’t need much help at the absolutely start of the user journey. The pain of low interest rates on savings accounts, combined with the hype around investing is in most cases enough to get them interested in starting with investing.

After that, there are three phases for which design interventions can be successful, as demonstrated by the three clusters of potential opportunities (dark blue) at the bottom of the journey (figure 37).

## Research Phase

The first we’ll call the Research Phase for now. This phase is after the realization that the user needs to start investing and before they actually starting investing. There are a lot of negative emotions here, regarding uncertainty, doubt, being overwhelmed by all the choice and all there is to learn about investing. Users might also feel scared or intimidated.

Potential opportunities here are as follows: users need to be given a clear overview, or guides, on how to start (which steps are involved). They are also doubting which sources to trust, as there is a vast amount of information available online. Therefore, an independent and transparent solution is necessary. Next, there is normally a large knowledge gap that needs to be filled, which can be done by providing this knowledge in an easy-to-grasp, millennial-proof format. Enabling interaction with peers could aid the need for reassurance. Lastly, in capital letters we see “TEACH A MINDSET”. This is in my

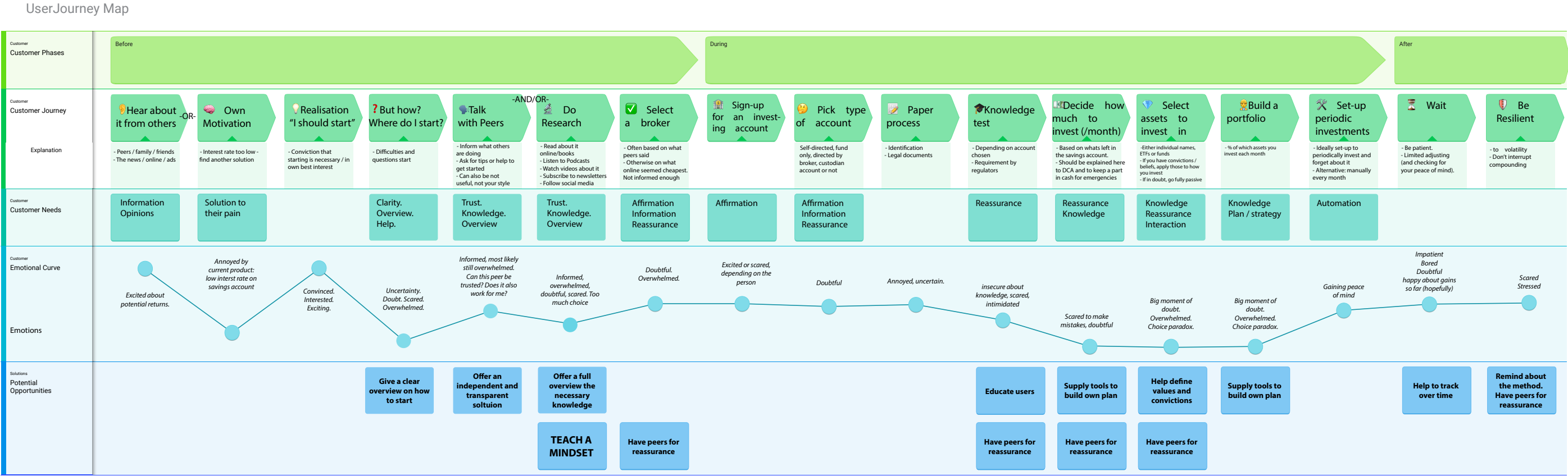


Figure 37. User Journey Map

opinion the most important point. There is no way to take away the uncertainty that comes with investing. And there is a lot of uncertainty, both during the user journey of signing up and staying invested after that. And while we can't take away uncertainty, we can learn to deal with it by adopting the right mindset. We can be certain about our choices in uncertain times.

Decision Phase

The second phase is the 'decision phase', as seen by the second cluster of blue boxes in figure 37. This phase is about making decisions about investing. Users have now

signed up for a broker and need to select what to invest in, for which percentage, how often and how much. This has very much to do with the practical side of investing, knowing the theory, the philosophy and most importantly your own values and convictions. Potential opportunities are to educate users, to supply them with tools to build their own plan, to help define their values and convictions about the world and apply them to investing. Lastly, peers for reassurance and discussion also appear here.

Maintenance Phase

Finally, the third identified phase is the 'maintenance phase'. This phase is about maintaining the new behavior, after users have started long-term investing. This phase is the hardest to design for, as it revolves around being able to sustain and maintain a behavior over 4 decades, not an easy feat. Opportunities here are to help users track progress over time and keep reminding them about the method and the mindset. If we can get them to fundamentally believe in the long-term way of investing, they can set themselves up for success. Peers can again play a role here for

reassurance, as well as inspiration. A clear connection can be made to the earlier discussed model by Prochaska and DiClemente (1985). The steps of (i) pre-contemplation, (ii) contemplation, (iii) preparation, (iv) action, and (v) maintenance can be seen throughout this user journey. Focus areas will be (iii) preparation and (iv) action.



## 3.7 CONCLUSIONS

For this thesis, the aforementioned research and decision phases seem to be the best focus areas. The research phase is about gaining all the knowledge and tools (and confidence) to start. Clearly, a good design solution can help create this for people. The decision phase (getting the knowledge and making the decisions on what to invest in) is also a place where design can create great impact.

In my opinion, these two phases can't be really seen as separate. After all, if you do your research but never end up deciding what you are going to do, you're not investing long-term. And without understanding investing principles, you can't make a decision based in reason. Of course you can always let others make the decisions for you, but that is undesirable. Millennials want to be in control of their money. On top of that, the fees you pay to an external manager eat in to your compounding effect.

Clearly users should be helped to understand what investing is about. They need to be

shown what their options are, in a clear and honest way. They should be allowed to discuss with their peers, to see they are not alone in their choices. And foremost, they should learn the right mindset to face all the worries that investing (and frankly, life) will bring over time. Because that is the price we have to pay for the spoils.

## 3.8 REFLECTIONS

Now that this chapter is completed, the following observations and reflection are made.

A ton of insights have been generated about the users, investing itself and the psychology behind it. The author should take note to keep generating insights, not only from within his own bubble and network, but also outside of it.

The report, up until now, has hopefully been engaging for you, the reader, to digest. Author should take care not to get too informal with his writing.

The last period of time has been bumpy, personally, so good effort should be made to get back on and stay on track. Reviewing the planning and sticking to it will aid greatly in the long run.

Content wise, it is time to make decisions and start formulating the design solution concretely, before finally developing the MVP.

# 04

## FROM RESEARCH TO DESIGN

This chapter introduces a redefined design brief, based on the insights from the research. This will provide the starting point for the MVP and the designs that follow.

- 4.1

List of Requirements
- 4.2

Decision-Making
- 4.3

What's in a name?
- 4.3

Reflections

### From Research to Design

## 4.1 LIST OF REQUIREMENTS

### 4.1.1 The list

The next figure 38 summarize all the insights from the context and user research. They are clustered under needs on the left hand side, followed by a list of required features that will be needed to fulfill these user needs (or

alleviate the underlying pains). A good design solution is of course more that a sum of features. On the following page, we dive deeper into requirements and insights that were used as input to formulate a good solution.

USER NEEDS		REQUIRED FEATURES
<ul style="list-style-type: none"><li>• Feel more confident about their choices</li><li>• Gain more knowledge</li></ul>	➔	<ul style="list-style-type: none"><li>• Education</li></ul>
<ul style="list-style-type: none"><li>• Get knowledge from a trustworthy source</li></ul>	➔	<ul style="list-style-type: none"><li>• Be honest transparent and trustworthy</li></ul>
<ul style="list-style-type: none"><li>• Not feel alone figuring it all out</li></ul>	➔	<ul style="list-style-type: none"><li>• Interaction with peers</li><li>• Feel like taken by the hand</li></ul>
<ul style="list-style-type: none"><li>• Learn by doing</li></ul>	➔	<ul style="list-style-type: none"><li>• Hands-on teaching</li></ul>
<ul style="list-style-type: none"><li>• Know exactly how to start</li></ul>	➔	<ul style="list-style-type: none"><li>• Guides step by step</li></ul>
<ul style="list-style-type: none"><li>• Understand value of investing</li></ul>	➔	<ul style="list-style-type: none"><li>• Frame as a positive thing to take care of yourself</li></ul>
<ul style="list-style-type: none"><li>• Get clarification in the mess</li></ul>	➔	<ul style="list-style-type: none"><li>• Give a clear overview of options and choices</li></ul>
<ul style="list-style-type: none"><li>• Feel identified</li></ul>	➔	<ul style="list-style-type: none"><li>• No guys in suits, just real people</li></ul>
<ul style="list-style-type: none"><li>• Build own plan</li></ul>	➔	<ul style="list-style-type: none"><li>• Allow users to build their own plan</li></ul>
<ul style="list-style-type: none"><li>• Make difficult choices</li></ul>	➔	<ul style="list-style-type: none"><li>• Help users formulate their own convictions &amp; values</li></ul>
GET THE RIGHT MINDSET		

Figure 38. List of requirements for the final solution.

# 4.2 DECISION-MAKING

## 4.2.1 The progress

The next figure 39 summarize all the insights taken into account whilst coming up with a good solution. It is important to keep in mind that this thesis didn't follow the typical Double

Diamond progress. Instead, quite early in the process a design idea was formulated, based on the research so far and the writer's experience in the asset management industry and regularly discussing (starting with)

investing with peers. This initial idea was formulated and validated in the first round of user interviews. This idea was then further developed based on the following sources of insights:

- Desk research and expert interviews
- User interviews
- Market Analysis
- Designer's intuition
- The list of requirements formulated at the end of the mid-term meeting

The insights themselves can be seen on the left-hand side of figure 39.

Next, these insights have been translated into required both content & features and required format & perception. The first regards what accordanances the solution should offer users and what features should be a part of it. The second is about in what format these features and content can best be captured, based on the research and the audience.

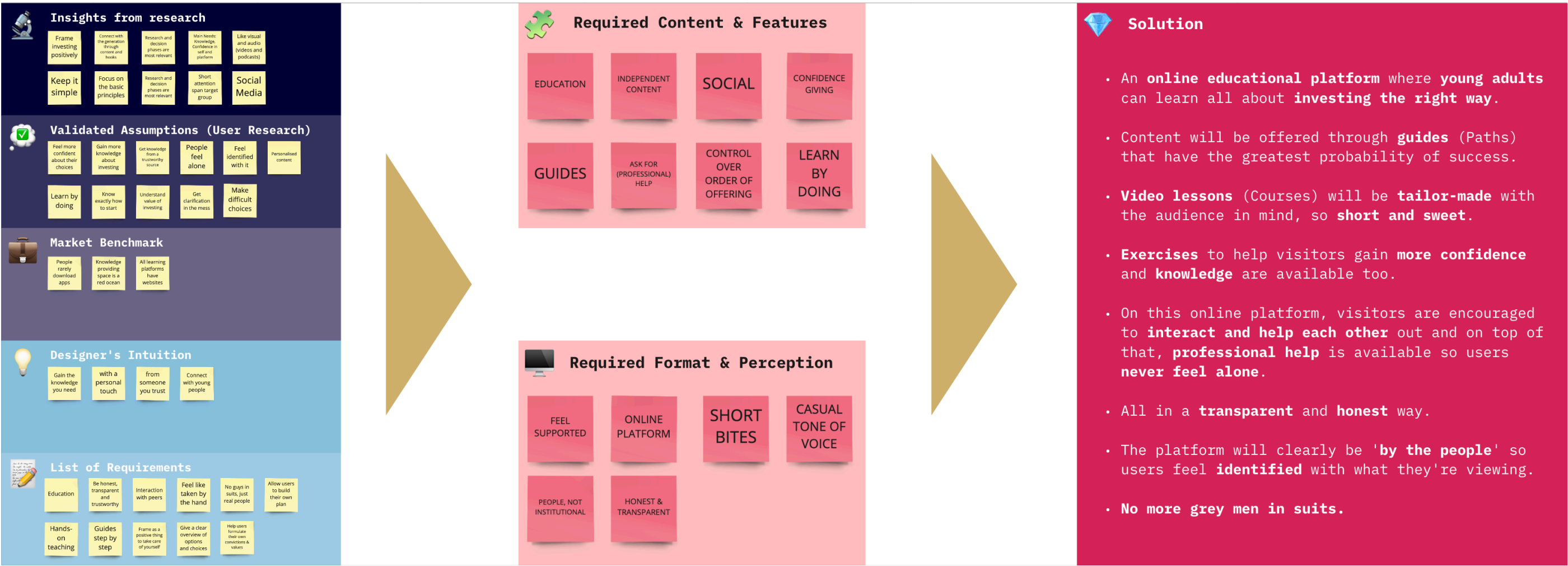


Figure 39. Decision-making process: from insights to requirements to solution

From those requirements, a general description was distilled about what the design solution should be like and what it should do for the users. It reads as follows:

- An online educational platform where young adults can learn all about investing the right way.
- Content will be offered through guides (Paths) that have the greatest probability of success.
- Video lessons (Courses) will be tailor-made with the audience in mind, so short and sweet.
- Exercises to help visitors gain more confidence and knowledge are available too.
- On this online platform, visitors are encouraged to interact and help each other out and on top of that, professional help is available so users never feel alone.
- All in a transparent and honest way.
- The platform will clearly be 'by the people' so users feel identified with what they're viewing.
- No more gray men in suits.

These points were then developed into the MVP (following chapter 05) and the strategic aspect (chapter 06).

## From Research to Design

# 4.3 WHAT'S IN A NAME?

## 4.3.1 The psychology of money

When people think about investing, they associate it with numbers and being difficult. I have a different view. In the end money is not numbers. Money represents choices, desires and things we find important or not. Money therefore is about psychology, the stories we believe in and tell ourselves. The famous Pareto principle can also be seen in both finance in general and in investing specifically.

### Investing is 20% numbers and 80% mindset.

As we've seen time and time again, the most important things are patience and resilience. This will allow you to compound your investments for a very long time, without interrupting it. It is very hard to change your numbers. You might get a salary raise every year, but increasing your income is hard and this directly affects your savings and what you can invest. You do however, have influence over your mindset. If you invest long-term,

without panic selling preemptively, the magic of compound interest will make sure that you always come out on top, in the end. The importance of the mindset is perhaps best shown in these three paradoxical principles that we came up with:

### Actively Passive

*Most money made in investing comes from patience, not from active involvement.* Let compounding do its thing. Often the best thing to do (if you're broadly diversified) is nothing at all. One of the greatest fund managers had a 29% a year track record, the average investor in his fund only got 5%. Why? The average investor constantly buys and sells at the wrong time. Media and the nature of investing are inherently tempting you to take action. The real money however is in the compounding, which simply takes time and can be destroyed by constant trading. While doing nothing sounds easy, when a financial crisis is happening and it seems like the world is on fire, it is very hard to do nothing. *It takes effort to stay passive, that is what it means to be actively passive.*

Confidently Uncertain

“Every time you make a plan, God laughs.” This is certainly true for financial planning. Your investments will fluctuate and so will your income. The reality is that finances are inherently uncertain. This often makes people insecure or feel like there is no point in planning for it. However, even though a lot is uncertain, by making conservative assumptions and identifying risks you can avoid pitfalls and create a plan. I want to teach people how to identify the risk they do and don’t want to take, how to navigate the uncertainty, create a financial plan and know how to adapt to changes. *Recognize that we can never be fully sure of a plan, but we can however learn to be confidently uncertain.*

Consciously Unaware

Every time we spend an euro we make a choice, often unconsciously. We choose between which brands to support, what is an actual need and what is merely a desire. If we want money now or money later. All those little euros add up to the choice of how we live now versus how we will live in the future. However, nobody likes to be constantly making this trade-off in their minds or on paper by creating strict budgets. Those who create them usually don’t follow through with their actual spending. I want to

make people aware of their choices. However once we have considered the implications and created our plans, our financial lives should be on the background and rely on the systems we have created for ourselves until it is time to review. This is what it means to be consciously unaware, think about once (...okay, maybe biannually), then forget about it and get back to living. This is not only true for financial planning, but also your investments. Set them up periodically and try to be unaware of them afterwards. You can look, but not touch. Have patience, keep adding and let time and compounding to their thing.

This philosophy and these three principles led to the creation of the name of my solution: **MoneyMinds**.



Figure 40. What’s in a name?

From Research to Design

4.4 Reflections

4.4.1 Reflections

This chapter was fairly short and straight forward. Its main purpose was helping formulate the transition from Research to Design, which it did. The main point of the previous reflection, was that the decision making should be explained more clearly. This thesis pivoted along the way, from a classical double diamond approach to a more Lean Startup-like approach. Therefore, the typical path of broad ideation, creating three concepts, selecting one and then developing it was not followed. Instead, the author formulated the initial design solution early in the process, based on the research, his experience on the subject and intuition. Next, this solution was validated and fine-tuned, until proper MVP-requirements could be formulated.

I’d say this approach worked well, at least for me personally. It has resulted in what I, and users so far, deem a successful solution. Furthermore, it leaves me with more time in the limited time-frame of the Master thesis, to

develop the solution further. More content can be created, more details can be added to the MVP and there will be more space for strategic development too.

In the next chapter, the MVP and its iterations will be discussed. We’ll see how we go from ideas and requirements to a wireframe, user flows, low fidelity and finally high fidelity prototypes.

# 05

## DESIGNING THE MVP

This chapter shows the creation and design of the Minimum Viable Product (MVP) and its iterations.

### 5.1 Wireframing

### 5.3 Expert Interview

### 5.5 User Tests

### 5.2 Version 1 - Basic MVP

### 5.4 Version 2 - Content

### 5.6 Recommendations & Reflections

## Designing the MVP

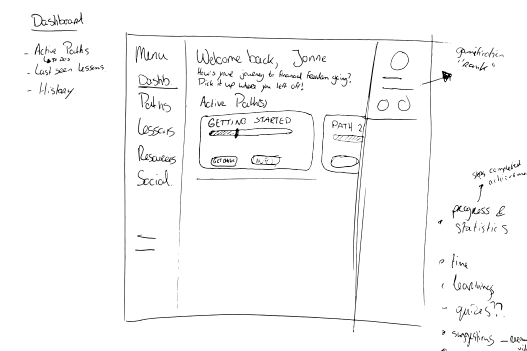
### 5.1 WIREFRAMING

#### 5.1.1 The first sketches

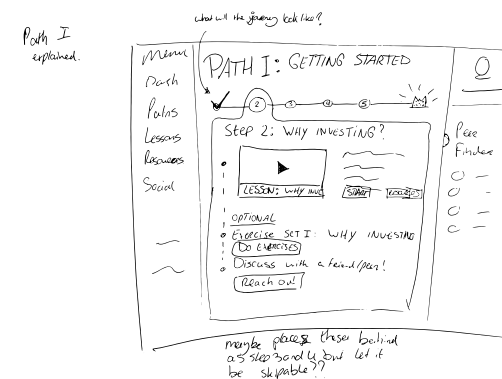
To design the MVP, a Wireframe was made. This is a paper version of the prototype, highlighting functionality that might be needed and practicalities, such as the position of

buttons and other UI elements. Much thought was put into future use cases and what would be required for a good prototype, based on the previous chapter. Next up was sketching out the overviews and flows of the MVP.

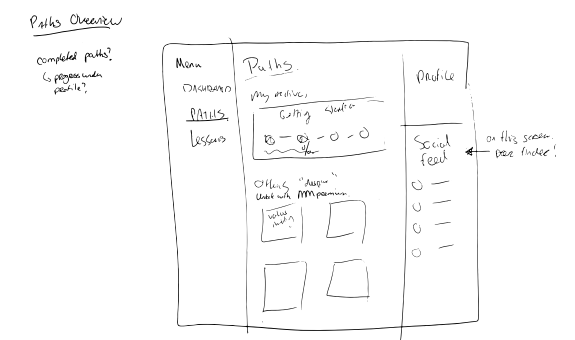
#### Dashboard



#### Path 1



#### Paths Overview



#### Social

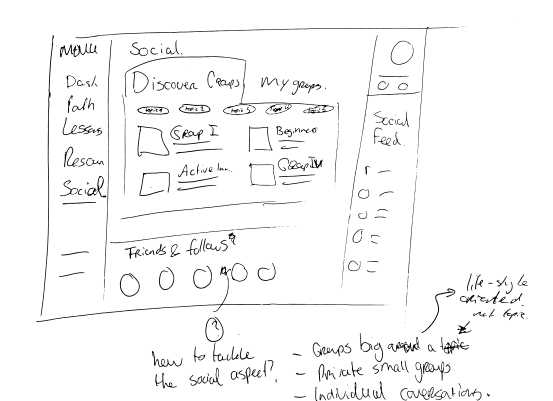


Figure 41. Some of the first sketches of the MVP



Screen flows

This is an overview of the steps to be taken throughout the MVP, along with the user needs being tackled. Users are taken from the landing page and after signing up or logging in, end up entering the platform. Then they either get shown a introduction session or get taken straight to their dashboard. After

the introduction users start their first Path, “Getting Started”. Then the layout of the first Path, in its first iteration, is displayed. In the meantime, users can visit the social page as well as the peer finder. Furthermore, there’s the premium part laid out, which only paid users have access to.

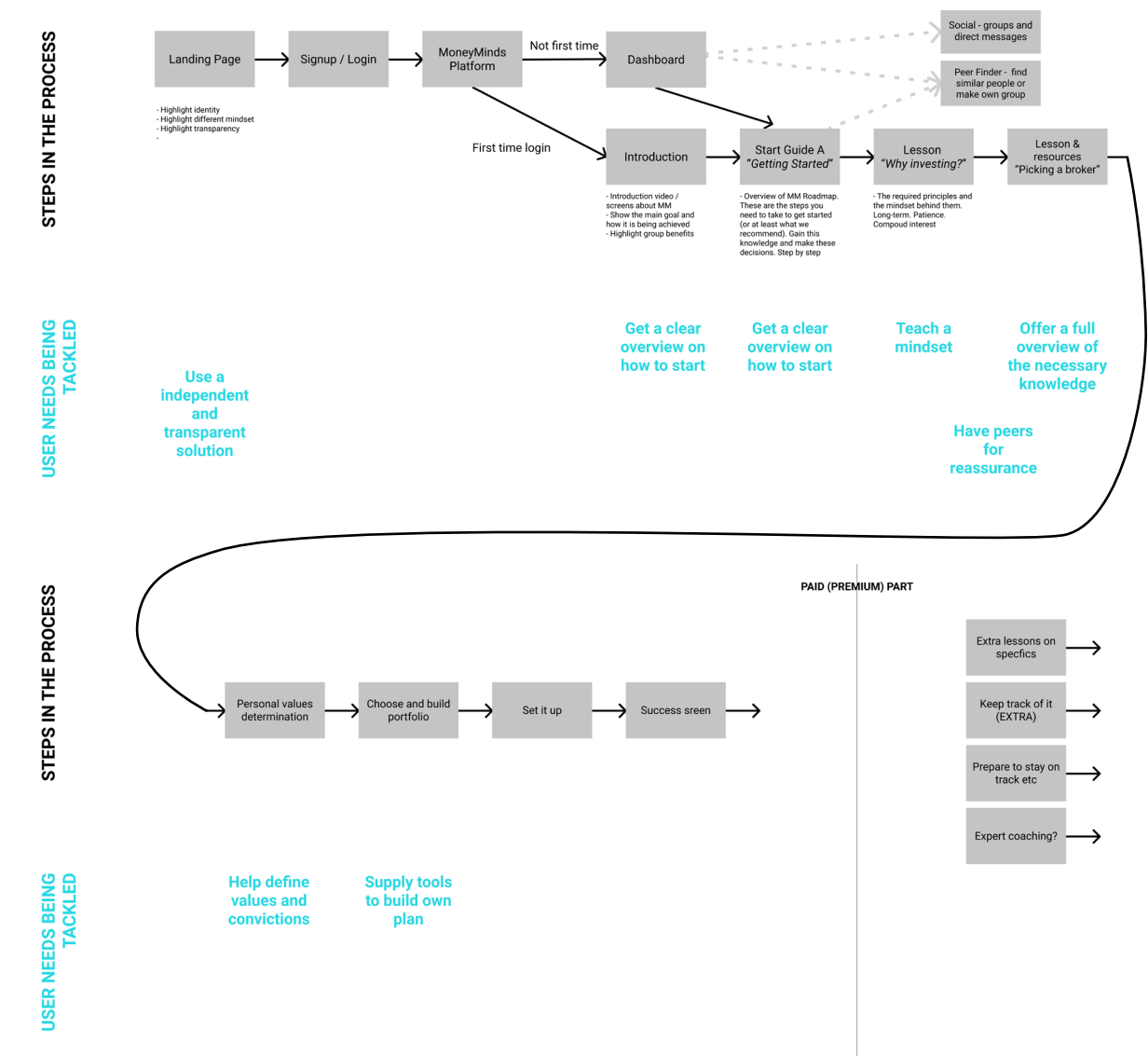


Figure 42. Overview of the steps to be taken throughout the MVP, along with the user needs being tackled

Landing page content

This is an overview of the content for the landing page. This copy was then used for the MVP, as well as the branding exercises later on.



Figure 43. Landing page content setup



Low fidelity mock-up

A low fidelity mock-up was created to get a better feel for the placement of UI elements and the interactions users would have with the prototype. They are shown below.

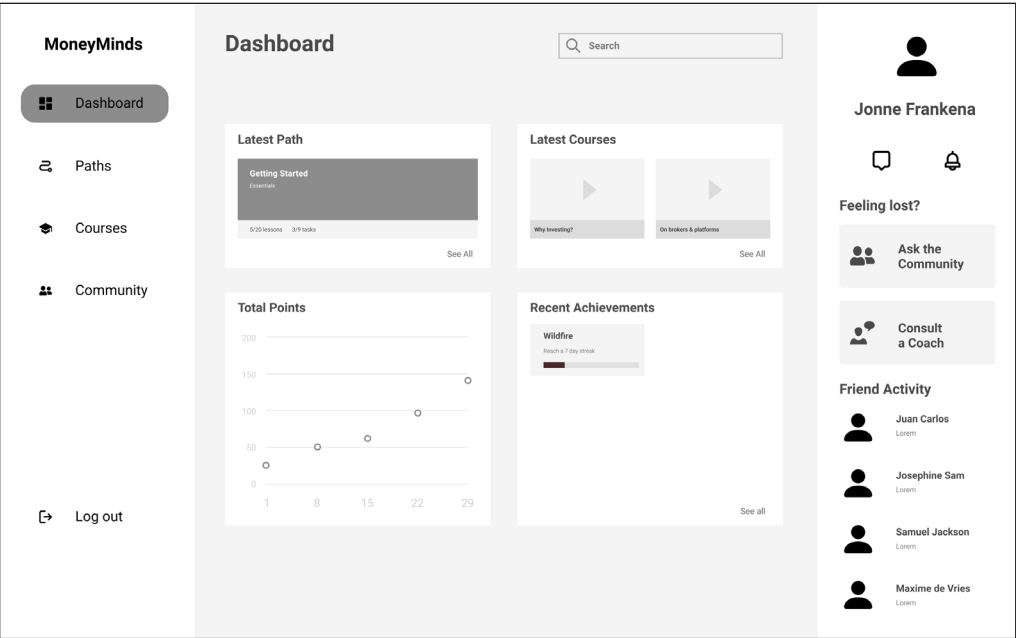


Figure 44. Low fidelity Dashboard screen

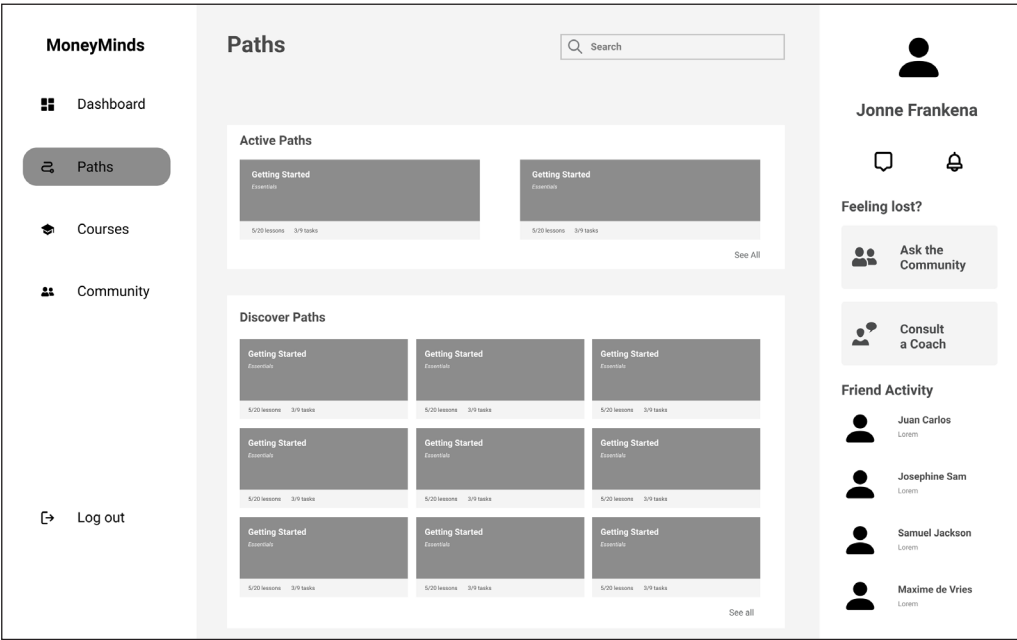


Figure 45. Low fidelity Paths Overview screen

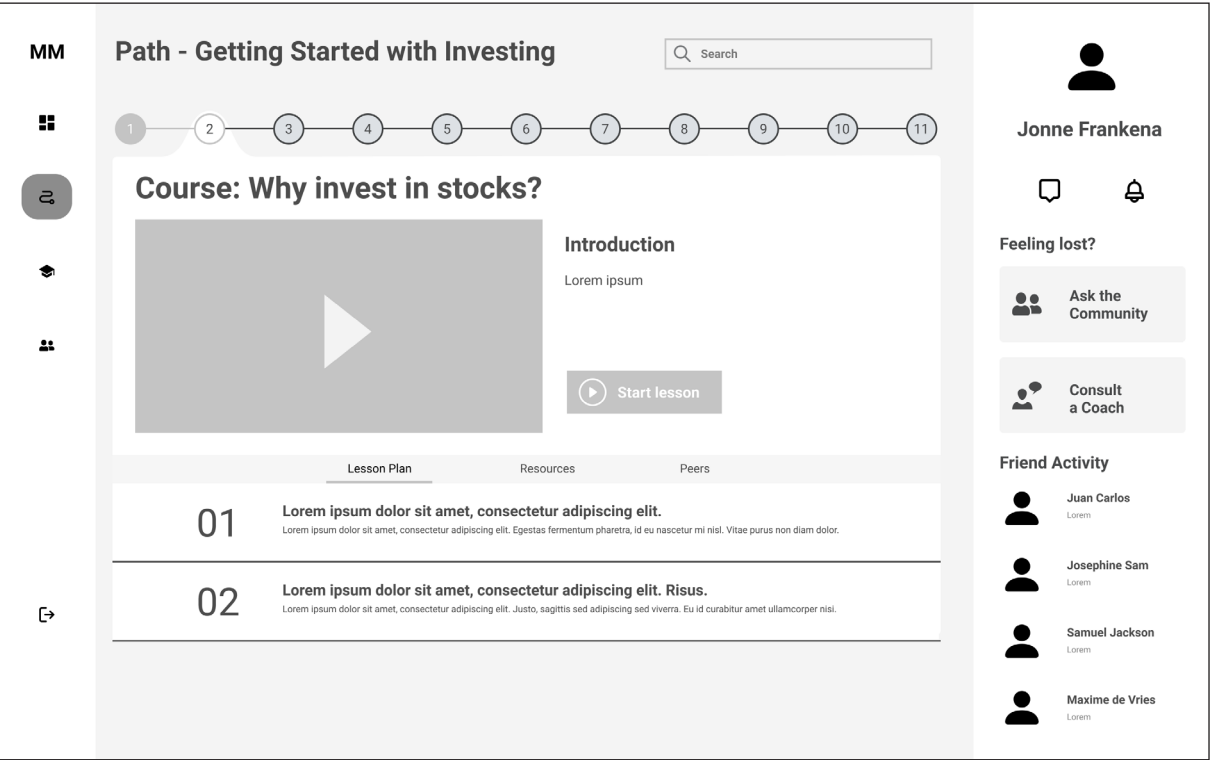


Figure 46. Low fidelity Path screen - step 2

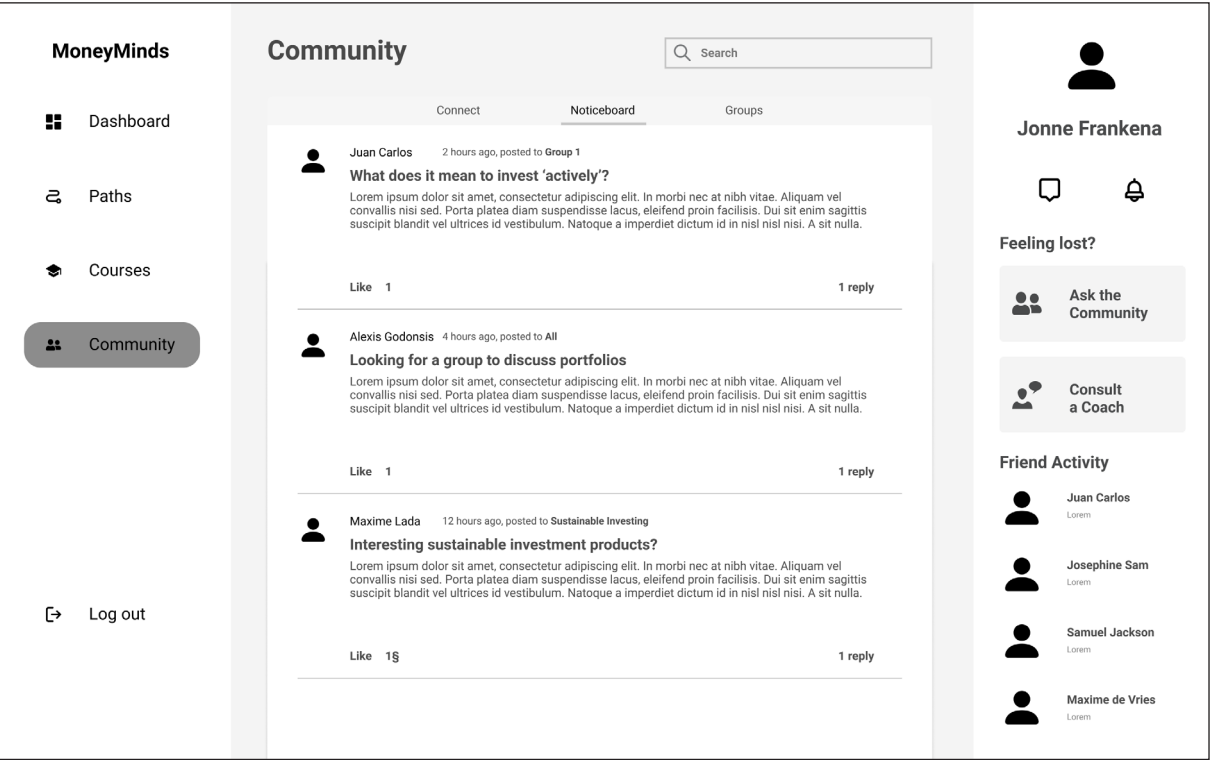


Figure 47. Low fidelity Community screen

# 5.2 MVP VERSION 1 - HIGH FIDELITY

## 5.2.1 Set-up

After the wireframing, a first version of the prototype was created in the design tool Figma. In order not to make the design too distractive, a simple color palette of green and grays was chosen.

## 5.2.2 Introduction

The starting point of the prototype is the introduction. This set of screens is presented to the user just after signing up and logging in for the first time. The first screen serves as a general welcome screen. Introduction

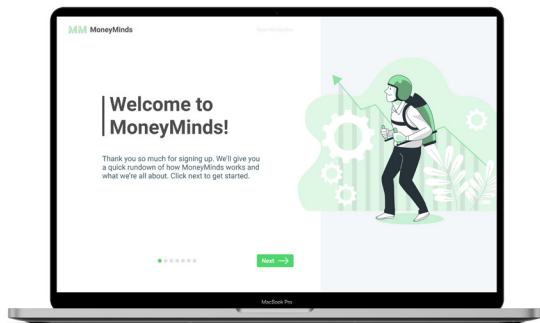


Figure 48. Introduction 1

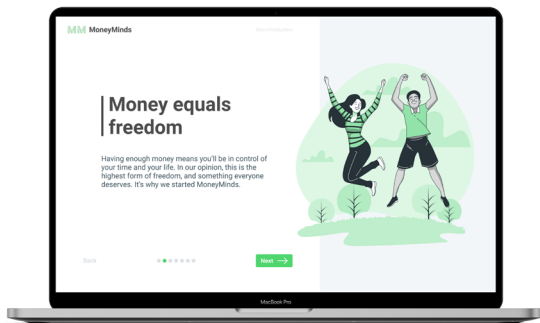


Figure 49. Introduction 2

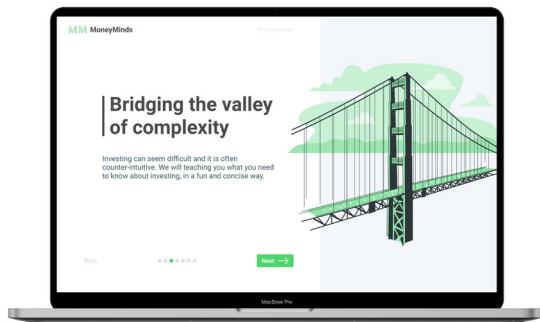


Figure 50. Introduction 3

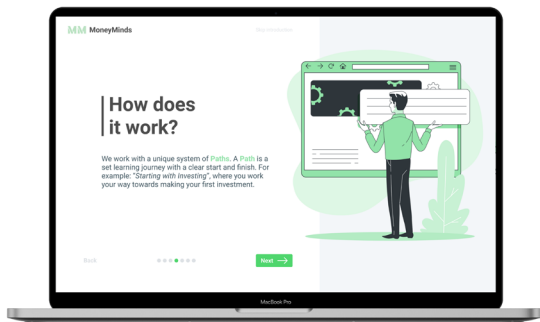


Figure 51. Introduction 4

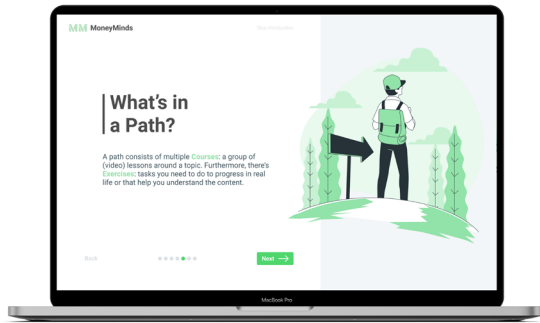


Figure 52. Introduction 5

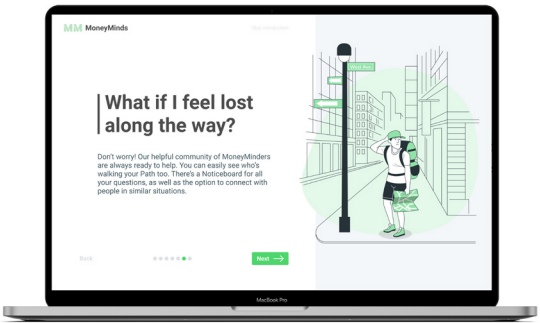


Figure 53. Introduction 6

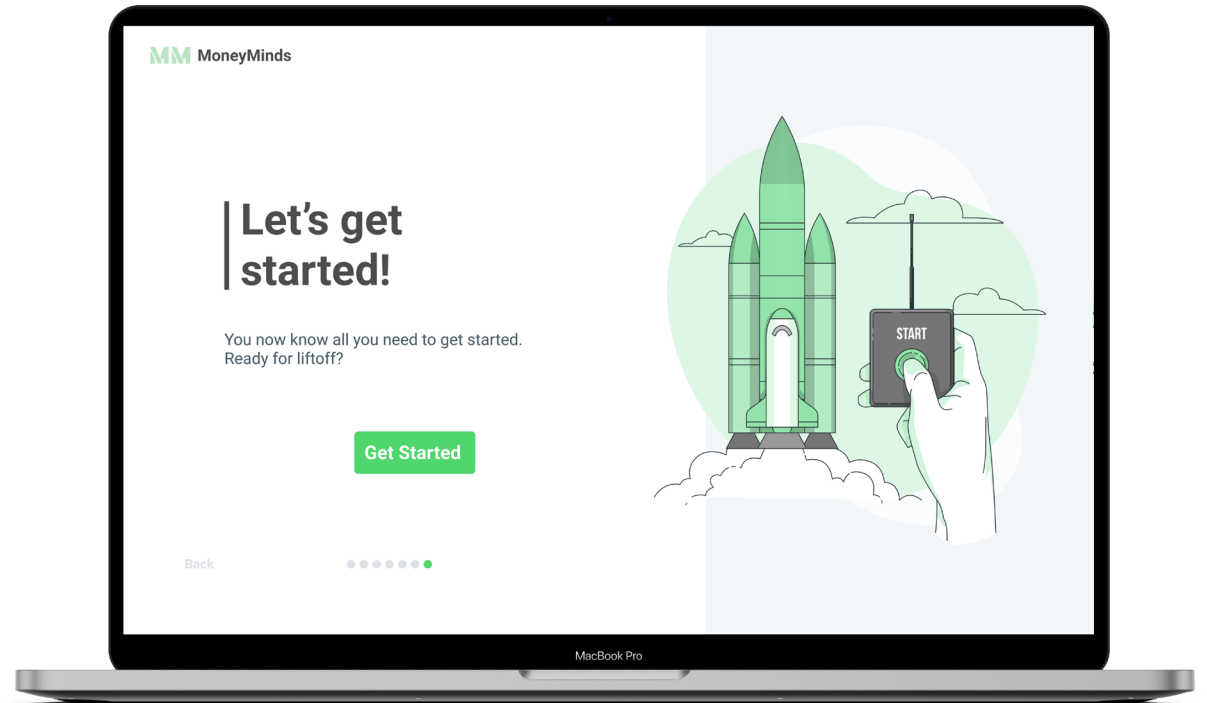


Figure 54. Introduction 7

2 restates the goal of MoneyMinds, to bring freedom to all. Screen 3 tells the user MoneyMinds aims to make investing less complex, whilst screen 4 explains the unique system of Paths. Introduction 5 then explains what's in a Path: Courses and Exercises. Screen 6 tells the user not to worry if they feel

lost along the way. MoneyMinds was built to make people not feel alone in their quest. Lastly, screen 7 is the success screen shown after completing this introduction. The user is then taken to the dashboard and can explore the prototype.

5.2.3 Dashboard

After completing the introduction, the user arrives at the Dashboard. The Dashboard can be seen as the home page of the prototype, informing the user about how he’s doing overall. On the top, we see a green bar explaining what this page is about, a concept we’ll see return on all pages. The user can jump right back into the latest Path he or she was working on. Furthermore, there is an overview of his recent achievements, as well as his total points this month. These concepts are not fully developed yet, but the reasoning is as follows. Achievements can be earned for interacting on the platform, helping out peers and completing Courses, Exercises and Paths. Points are

awarded in the same way and help you track your progress over time. Furthermore, the user can jump back into the latest courses he’s attended too.

The menu on the left side allows for navigation to the different parts of the prototype.

The bar on the right side contains information about the user, such as his rank (seniority) on the platform. There’s a chat, a notification screen and call out aimed to put the user at ease. If they feel lost, they can ask the community for help, as well as consult a professional coach experienced in finance and investing, to help them out, for a fee.

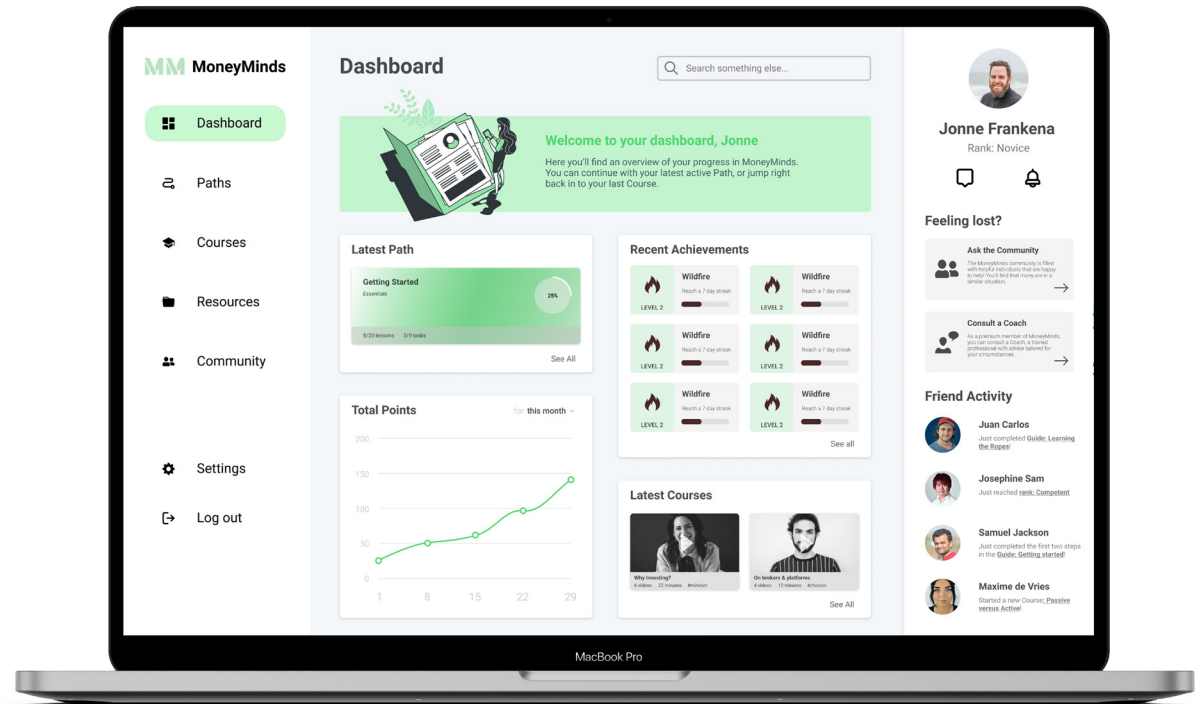


Figure 55. Dashboard

5.2.4 Paths Overview

This screen shows the overview of all MoneyMinds Paths. A Path is a set learning journey, with a clear start and finish. View them as a set of Courses and Exercises, handpicked to best help you complete a goal.

The goal of a path can be “Start Investing”, where you start from nothing and in the end you’ve actually invested in a financial product. On this page, you can easily jump back into your active Paths or discover new ones that might interest you.

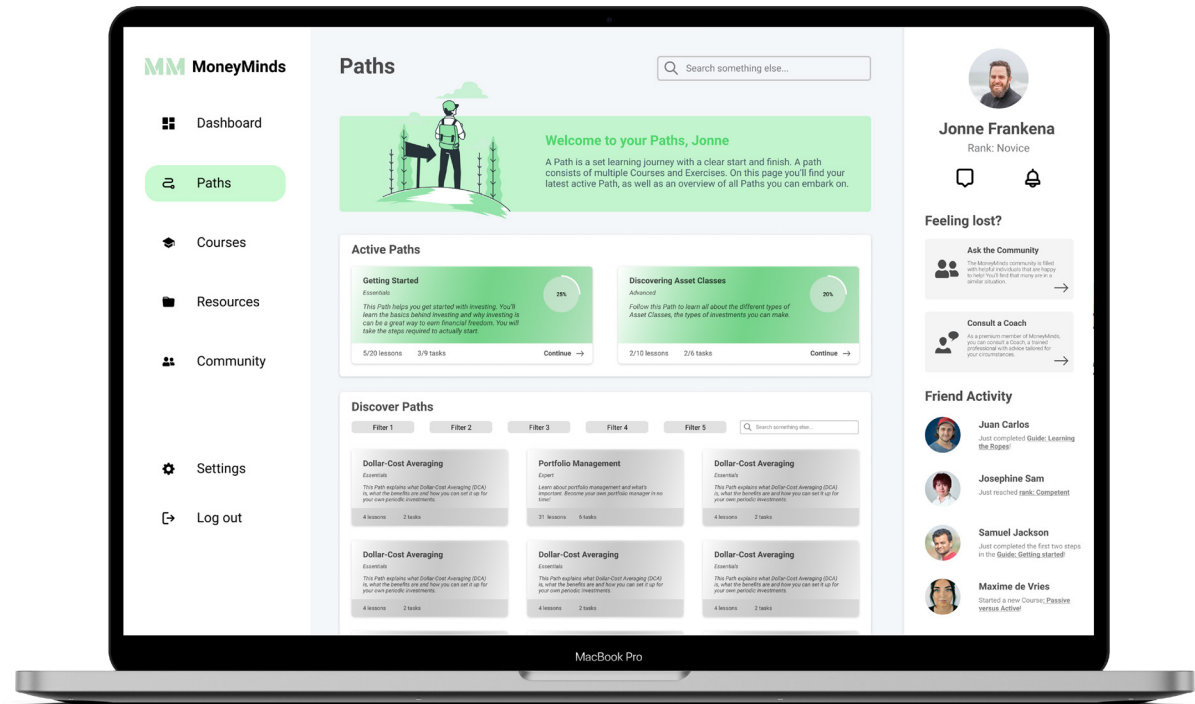


Figure 56. Paths Overview

5.2.5 Resources

During some courses, additional resources might be offered. Think about certain photos, PDFs or spreadsheets that are useful for explaining something. On the resources page, all the resources can be found and downloaded again, together with an indication of in which Course they were used

5.2.6 Courses Overview

Courses are video lessons, grouped around a topic. They are part of Paths, but can also be viewed separately on this page. You can see your Courses, those you're currently watching and you can also discover others.

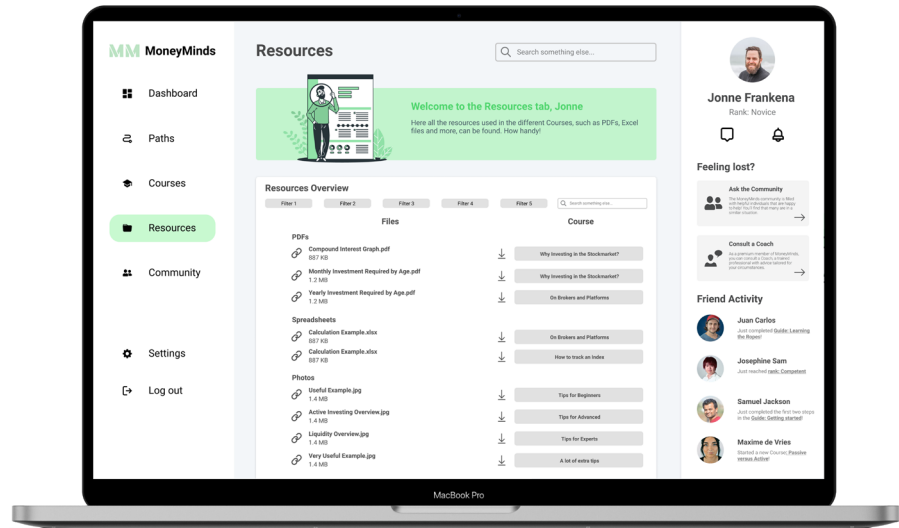


Figure 57. Resources

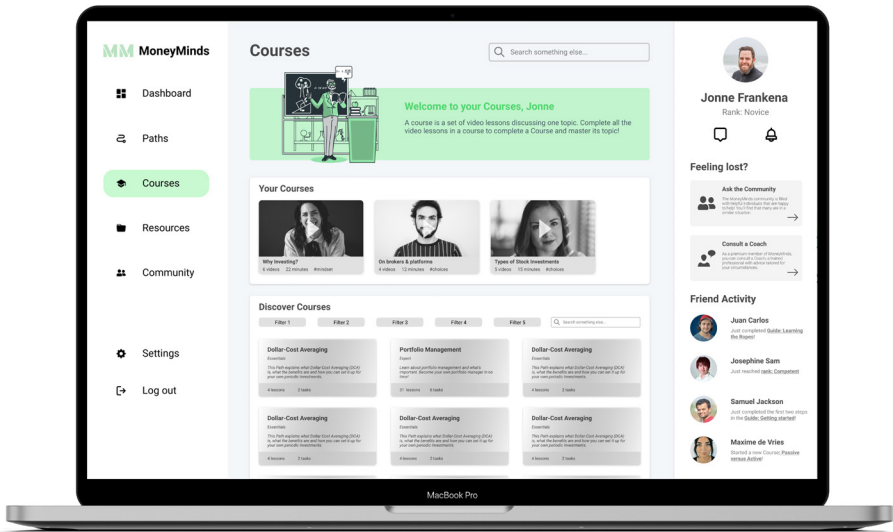


Figure 58. Courses Overview

5.2.6 Community

The Community page is where all MoneyMinders get together. There's a general Noticeboard on which users can post questions and answer them, in exchange for a form of social credits and status (much like Reddit's Karma system). Key words indicate what the question is about, as well as a system

of comments and likes. On the Connect page, users can get matched with peers that fit their profile or moment in life. This way, they can find like-minded peers to help them or to discuss with. Lastly, on the Groups page, users can join public and private groups for discussion and interaction. These are based around stages in life, as well as finance and investing behavior.

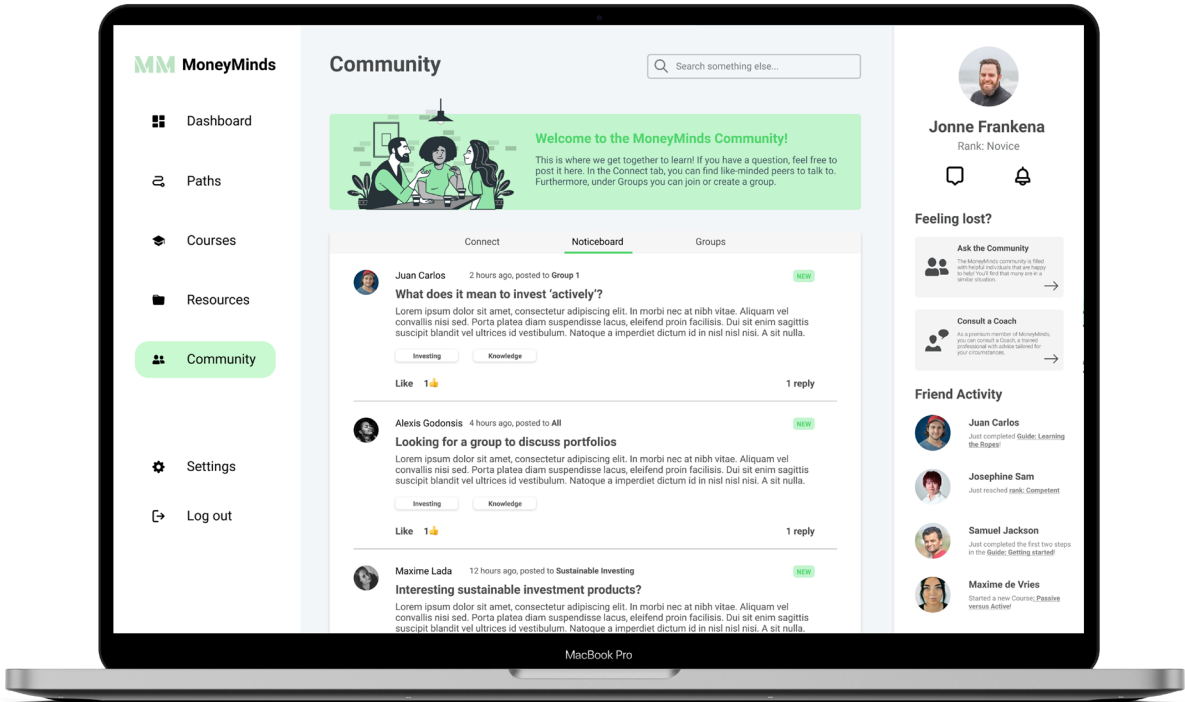


Figure 59. Community - Noticeboard

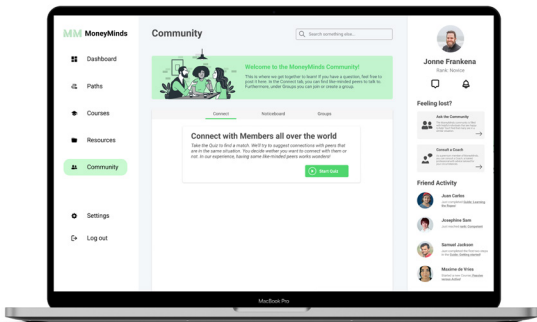


Figure 60. Community - Connect

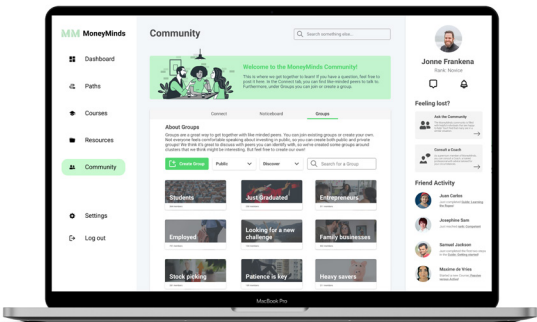


Figure 61. Community - Groups



5.2.7 The First Path

Like explained before, MoneyMinds works with a system of Paths. In this pre-determined journeys, the optimal selection of Courses and Exercises is created so you learn and do exactly what’s needed to complete the Path’s goal. The way you do it is still very much yours.

For the MVP, I designed the content of the first and most important Path: Getting Started with Investing, the goal of this thesis. Some of the 8 steps will be shown here, with explanation.

This first step shows what a Course in a Path looks like. You have a video thumbnail of

the first lesson, combined with a small text detailing what the lesson is about. You can see how long it will take, how many other students are currently watching this video and which other Lessons are in this Course.

In the resource tab you can see the resources for this Course, while Peers tab has a form for questions and answers regarding this lesson. On this page, you can also see which of your peers are currently on this path. This social feature gives users the feeling that they are not alone as well as the confidence to get through with it, if they so need to.

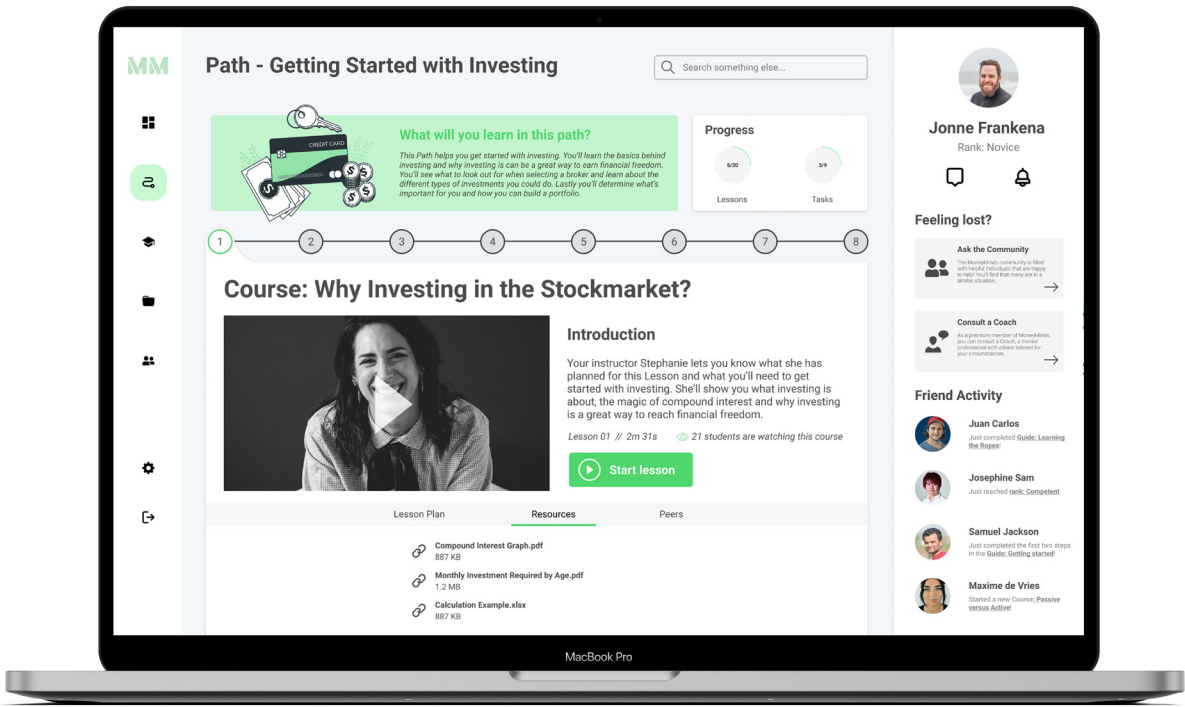


Figure 63. Getting Started with Investing - Step 1 - Resources

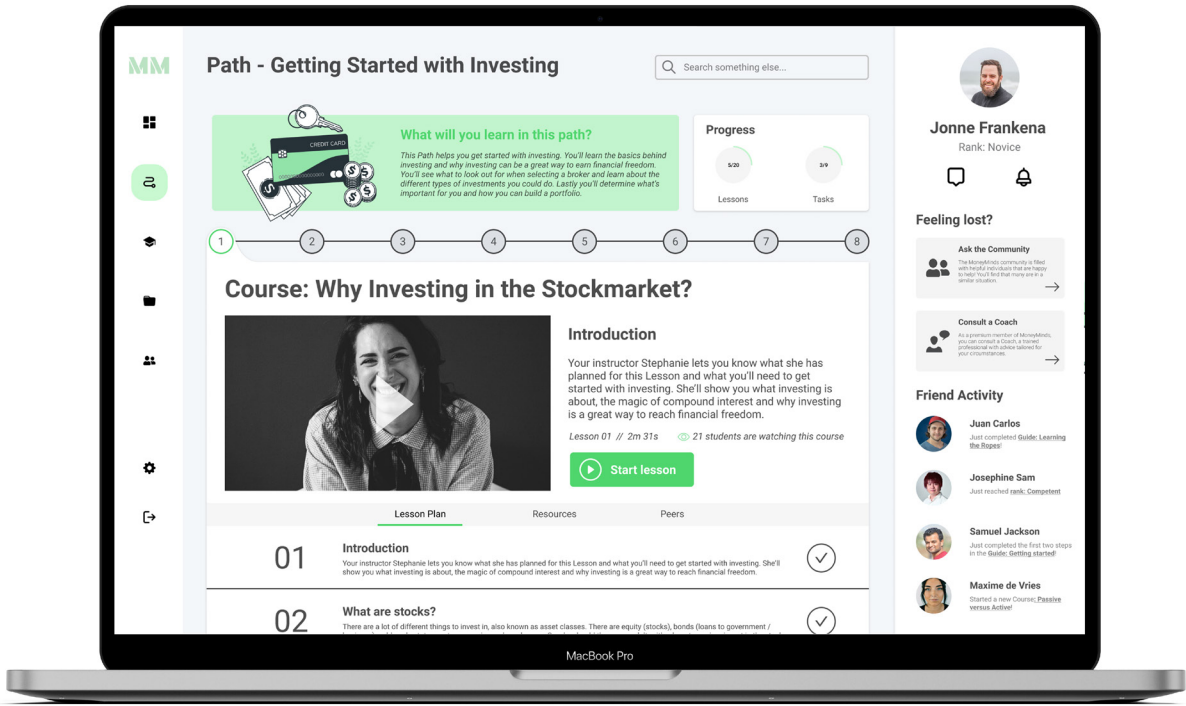


Figure 62. Getting Started with Investing - Step 1

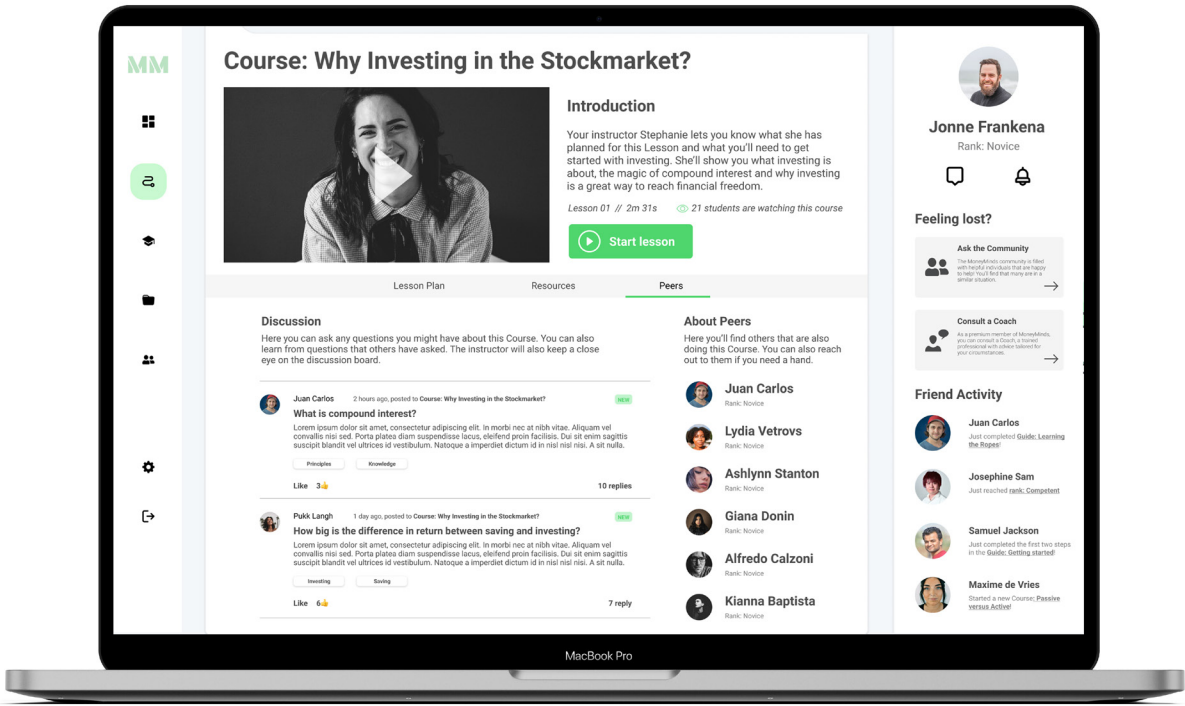


Figure 64. Getting Started with Investing - Step 1 - Peers

Step 3 of the Path concerns picking a broker through which you can invest, after learning about it in step 2. This feature is location-based and the user can switch locations to see the available options in their country. Important is that users can make their own decision for a broker. The platform simply aims to show them the options in an objective manner.

The sustainable investing screen asks the users, after receiving a course about sustainable investing, what their choices are. They can choose certain topics they deem important, to get extra exposure to (such as equal rights or a clean ocean). Also, they can indicate certain topics they want to avoid in their investments (such as fossil fuels or tobacco).

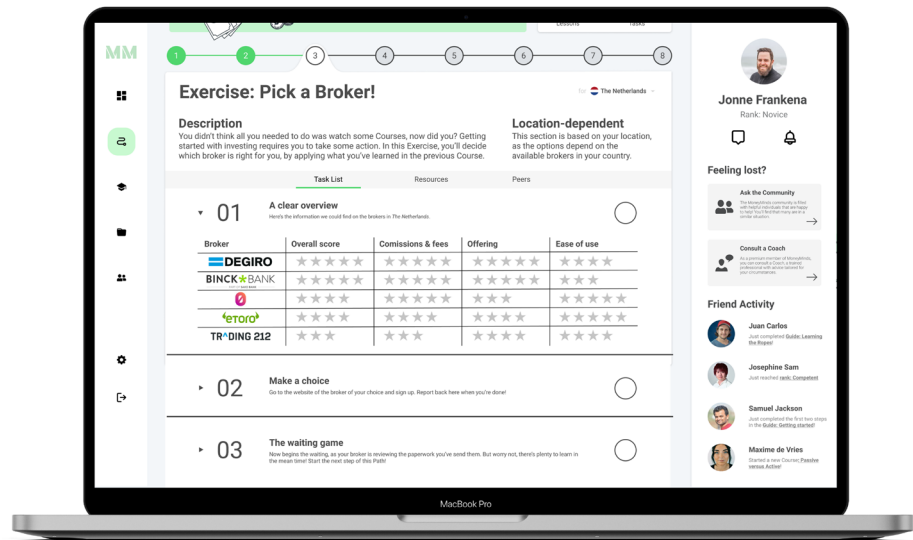


Figure 65. Exercise - Picking a broker

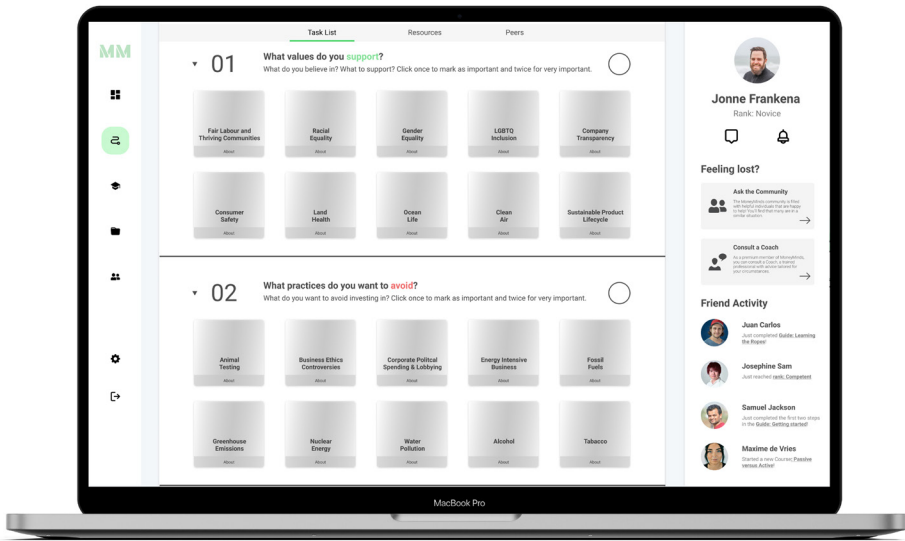


Figure 66. Sustainable Investing

Step 5 of the Path contains an Exercise: all about you. Here, the user gets asked to formulate his own risk profile and type of investing he prefers, based on what he or she learned in the previous courses. If they believe Active investing is a good idea, they can say so here, as well as choosing whether they or an asset manager will determine the content

of the active part of the portfolio. Also, the user answers questions about their risk preference. Like how long their horizon is and how they would react if the value of their investments would drop by -40%. In the end, the platform suggests a ratio between bonds (less volatile) and equity (more volatile and rewarding). The equity part is then broken down into a passive

and an active part. The active part then consists of either mutual funds or individual stocks to be picked by the user, depending on their previous answers.

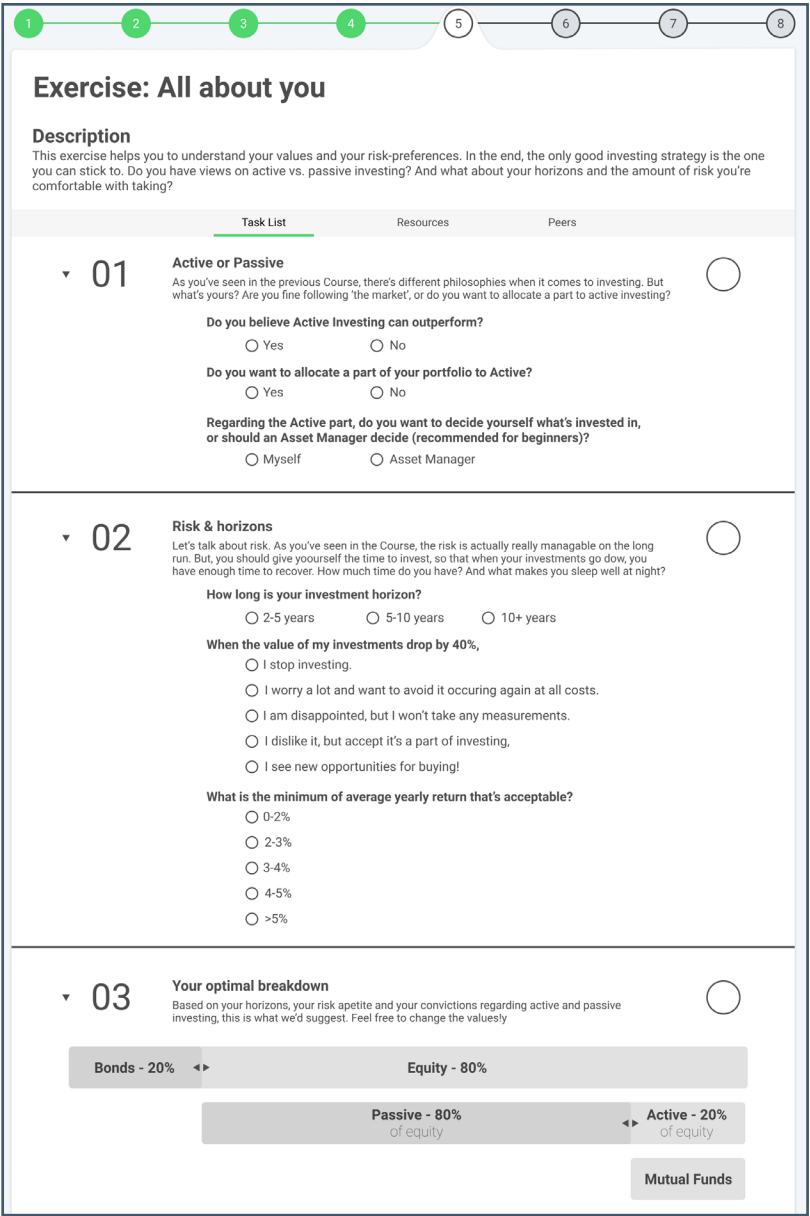


Figure 67. Exercise - All about you

In the second to last step of the Path, the user can build their portfolio. The platform suggests building blocks for all the categories they have selected previously, for example bonds, equity passive and equity active. The user get recommend some options, but in the end is free to make their own decisions. In figure 70 on the next page, you can see the final step.

Here, users see again which decisions they have made and can revisit them if they so wish. Lastly, they are invited to go to their chosen broker and actually create the portfolio they have built. After doing so, they have started with investing! The success screen as seen in figure 69 is presented to them. Here they can give feedback or see new paths.

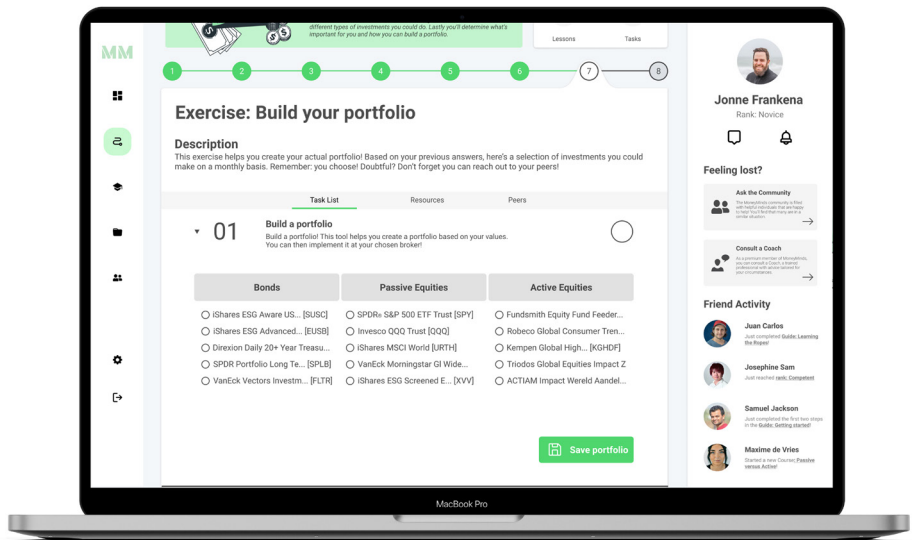


Figure 68. Exercise - Build your portfolio

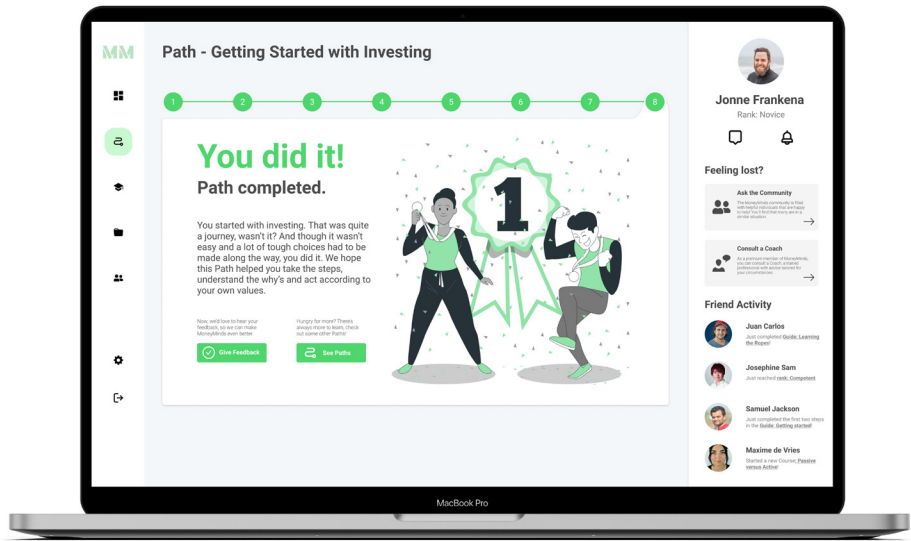


Figure 69. Nice, Path Completed

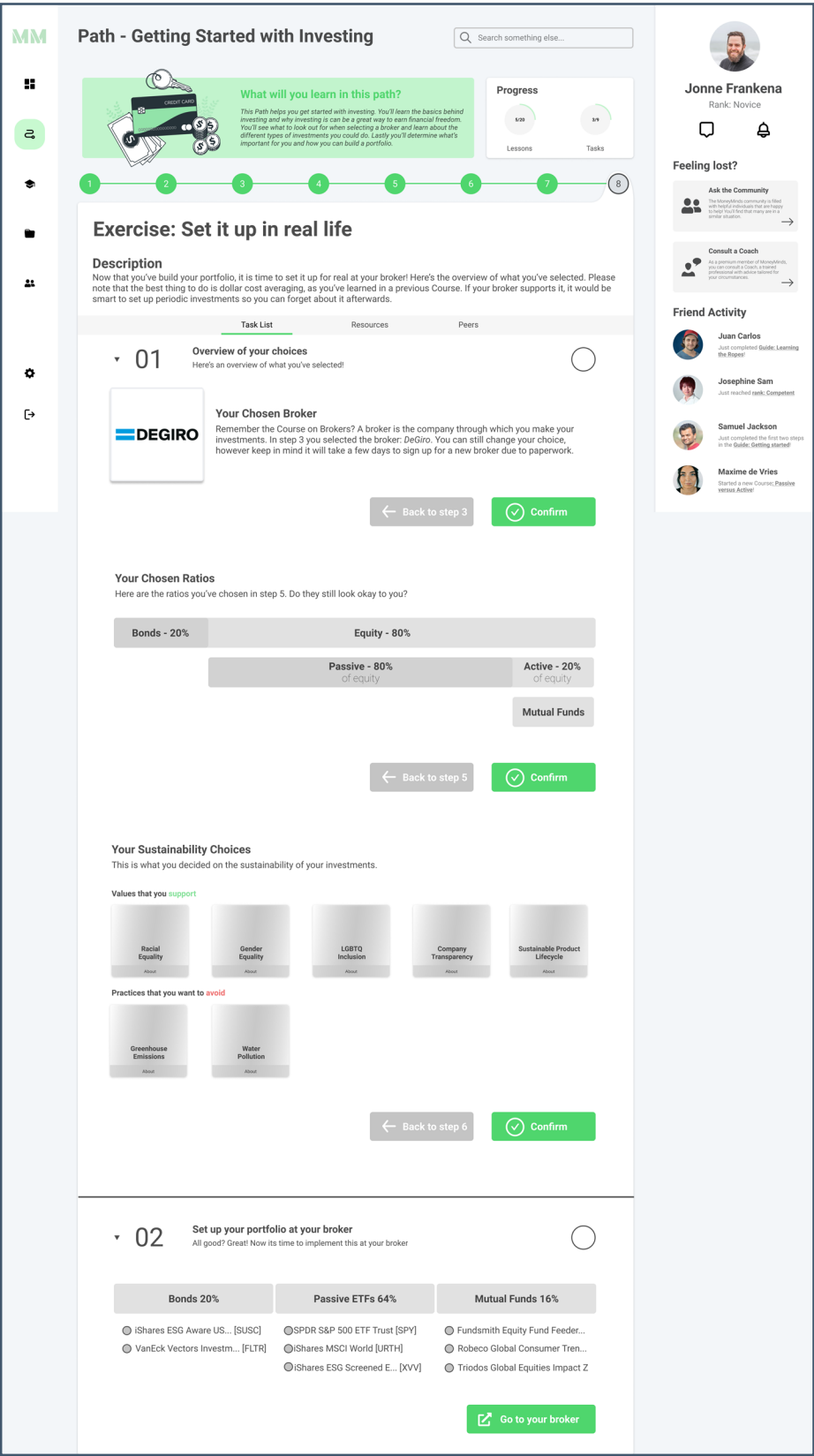


Figure 70. Exercise - Set it up in real life

# 5.3 EXPERT INTERVIEW

## 5.3.1 Set-up

Aaron Boogaard was interviewed through Zoom. With his permission, the conversation was recorded for later reference. The goal of the expert interview was to validate the investing content of the prototype, to see how suitable it was for beginning investors and to gain extra insights into investing and learning for the target group.

## 5.3.2 About the expert

Boogaard is a young professional with excellent understanding of the investing world. Apart from investing for some years, both personally and for a trust, Boogaard is a partner at a firm that creates sales enablement material for asset managers. He is an expert on applying storytelling and visualization to complex financial matters, to explain them in a concise way to audiences.

Boogaard was asked to review the prototype and brainstorm about the content of the Path ‘Starting with Investing’.

## 5.3.3 Order of topics

With the help of Boogaard, the content of the first Path changed significantly. It was now more optimized for beginning investors. It starts now with the fundamental question: why is investing something to consider in the first place?, before diving into why the stock market, risk, what types of investments and so on. The sustainable investing part was deemed too complicated for the first Path and was therefore simplified, with the full version making its appearance in another, dedicated Path. Common misconceptions were tackled too and the part of picking a broker was moved to the back. See figure 71 on the previous page.

VERSION 1: path - getting started 1



VERSION 2: path - getting started 1



Figure 71. Outcomes of the brainstorm session during the expert interview

## 3.3.4 Path Content

Furthermore the content of the Path was further developed. The script for the first Course was fully written, whereas the other Courses got some key words each to depict what they will be about. The script can be viewed in Appendix D and in the videos of the Course in chapter 5.4.



# 5.4 MVP VERSION 2 - UPDATED CONTENT

## 5.4.1 New Iterations

The following photos show the changes made in this second iteration of the MVP. As you can see in figure 72, there are now 11 steps in this Path, illustrating the more spaced out delivery of content. Furthermore, in figure 74 on the next page, you can see the ‘Define my Profile’ page. This page is now simplified, with the sustainability question reduced to simply one question about ESG (sustainability) filtering. Furthermore, the ‘Your Breakdown’ part now only features a split between bonds

and equities. The part about active investing is moved to another path to keep it simple. In Figure 75 you can finally see that a hover modal has been added to the slider bars, to remind the users what these words meant in very simple ways.

The full prototype can viewed on Figma using the following link:

<https://bit.ly/MoneyMindsPrototype>

Or scan the QR code below in figure 73.

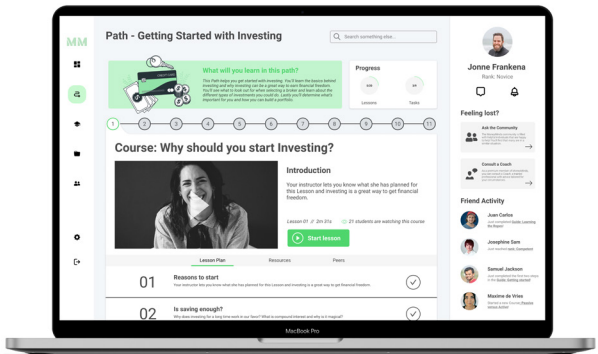


Figure 72. The Path now has 11 steps to complete



Figure 73. QR Code for the prototype

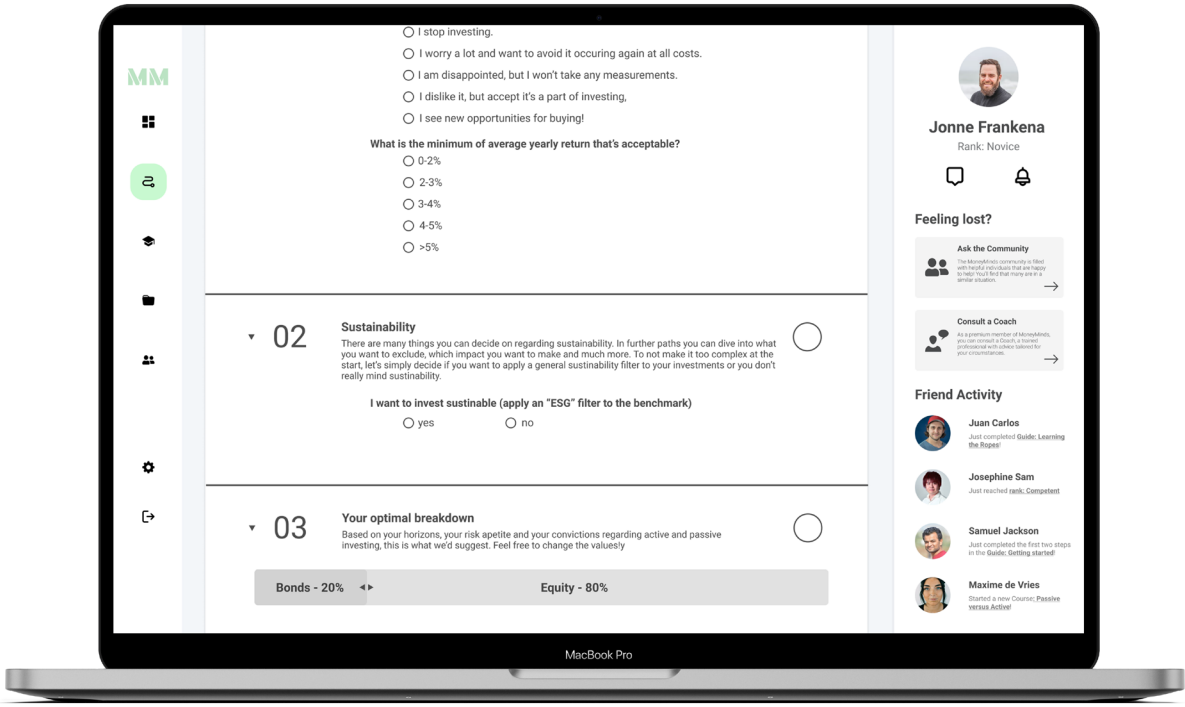


Figure 74. The profile-building page is now simplified.

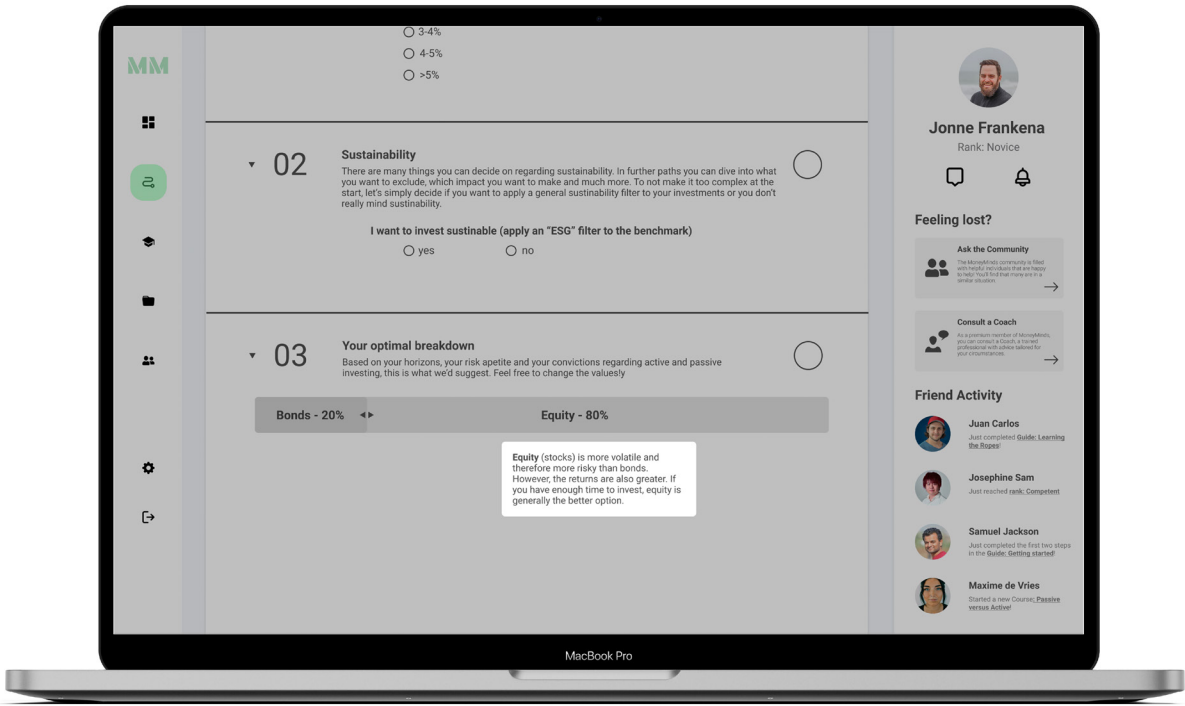


Figure 75. The hover modal explaining the word equity

The final summary screen has also been updated, to reflect the changes in previous steps. In the last part, users don't build their own portfolio anymore. This is left for later, more complex Paths. Here, users simply get some investment products recommended, based on their previously determined ratio between bonds and equities, and their preference

for sustainable investing. These are simple, broadly diversified and passive options, that generally fit any starting investor well. Later, as the investor becomes more knowledgeable about investing, they can change their portfolio accordingly. In the second screen, figure 77, we see the hover modal explaining what the recommended product is about.

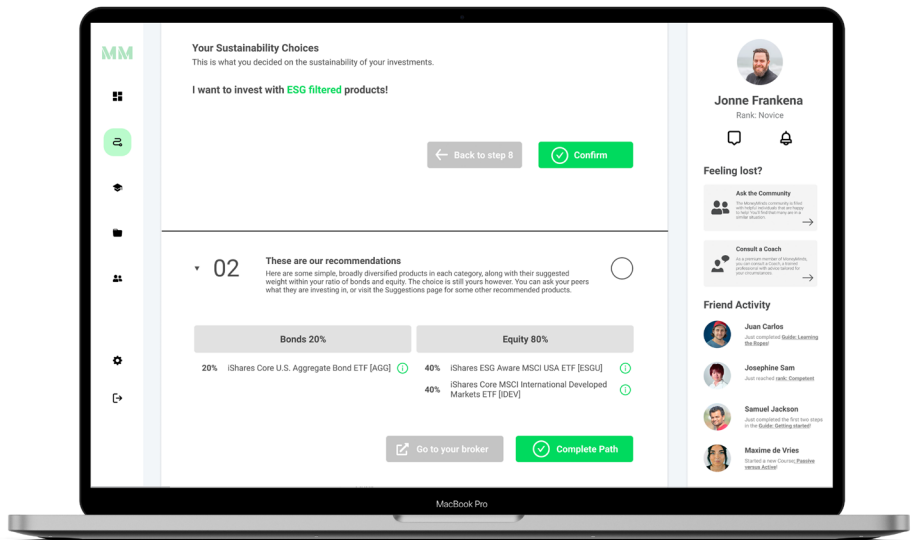


Figure 76. The updated final summary screen

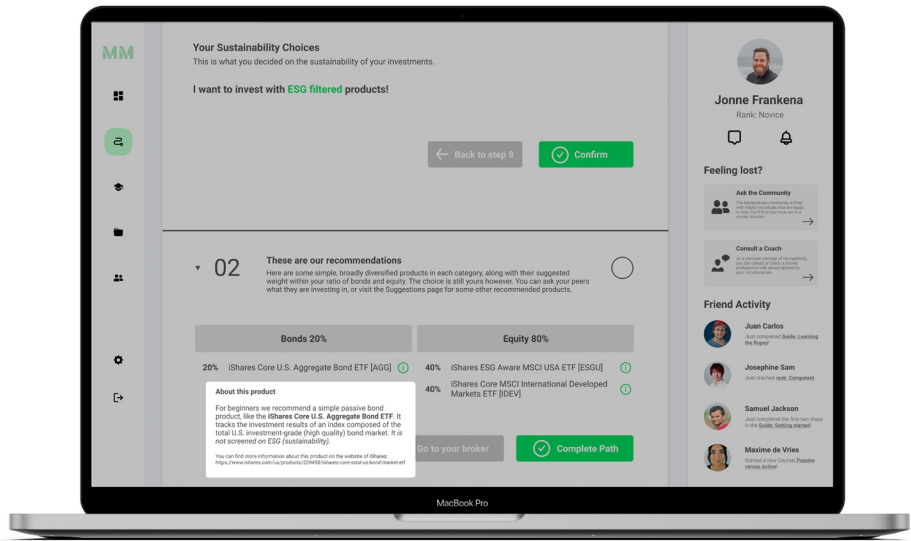


Figure 77. Hover modal explaining an investment product.

### 5.4.2 Video Course 1

As part of the content of the first Path, 4 video Lessons for the first Course "Why Investing?" were created. The script has been discussed in a previous chapter. The videos were used in user testing (next chapter), to give a better idea to the testers of how the prototype would work in real life.

Based on the script, a simple pitch deck was created in Microsoft PowerPoint. Focus here was keeping the content attractive for the millennial / Gen Z target group: short, low word-density and casual. Whilst playing this slideshow, I then recorded myself explaining the content to an online audience using the program Loom.

The Course with it's four lessons can be watched on YouTube here:

<http://bit.ly/MoneyMindsCourse1>

Or by scanning the following QR code:



Figure 78. QR Code for the Course on YT

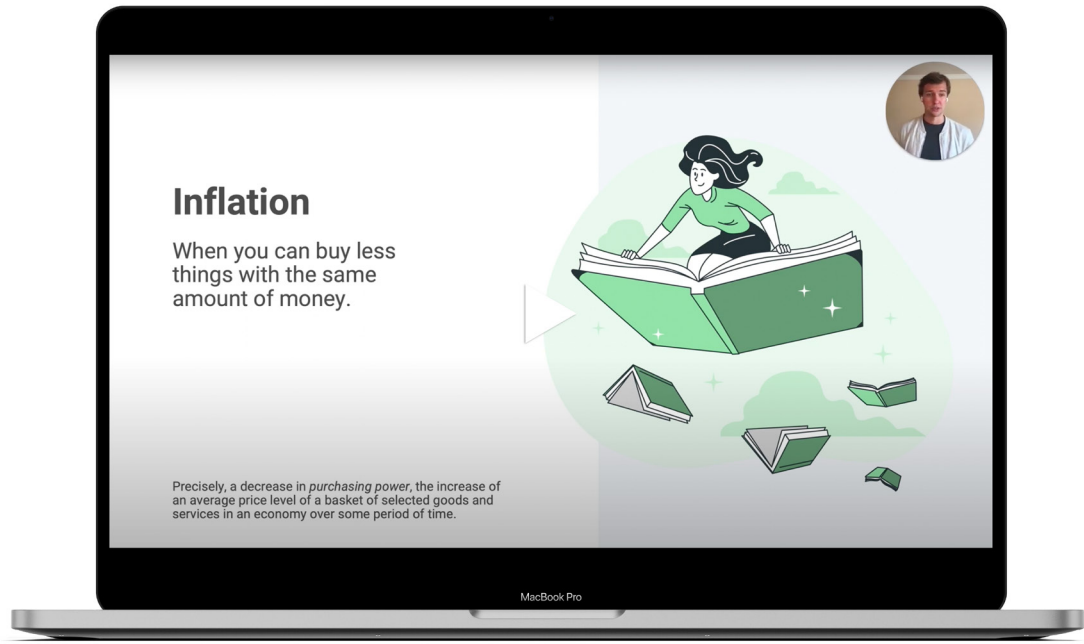


Figure 79. A still from the Course video

### 5.5.1 Set-up

To be able to arrive at relevant insights for the improvement of the MVP, a research plan was drafted. The research objectives were:

Participants were given a general introduction about the prototype and this thesis project. Next, they were asked some introductory questions about themselves and their situation regarding investing.

- Starting to use the platform (introduction)
- 'Using' the social features
- Navigating through the screens
- Exploring the path "Starting with Investing"
- Completing the path (success screen)

- What was your overall impression?
- What was the best/worst thing about it?
- How would you change the usability?
- How would you compare the effectiveness of this MVP to help you get started with investing to other existing tools/resources?



The meeting notes were compared to the recordings of the meetings, to make sure no feedback was missed or wrongly noted down. Next, all feedback was summarized on post-its in the online whiteboard tool Miro (figure 80).



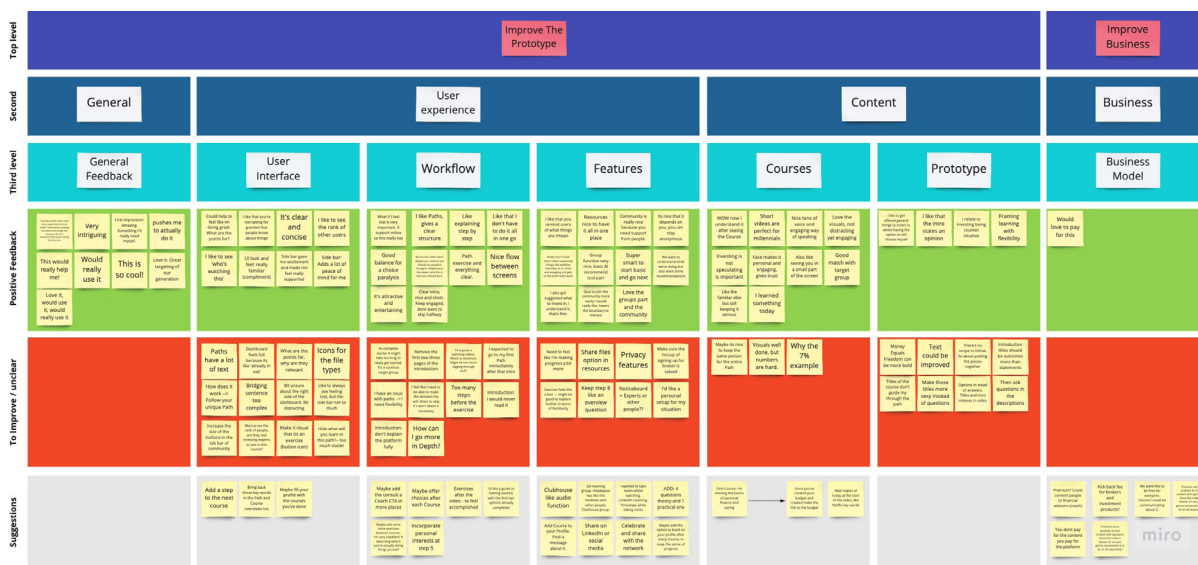
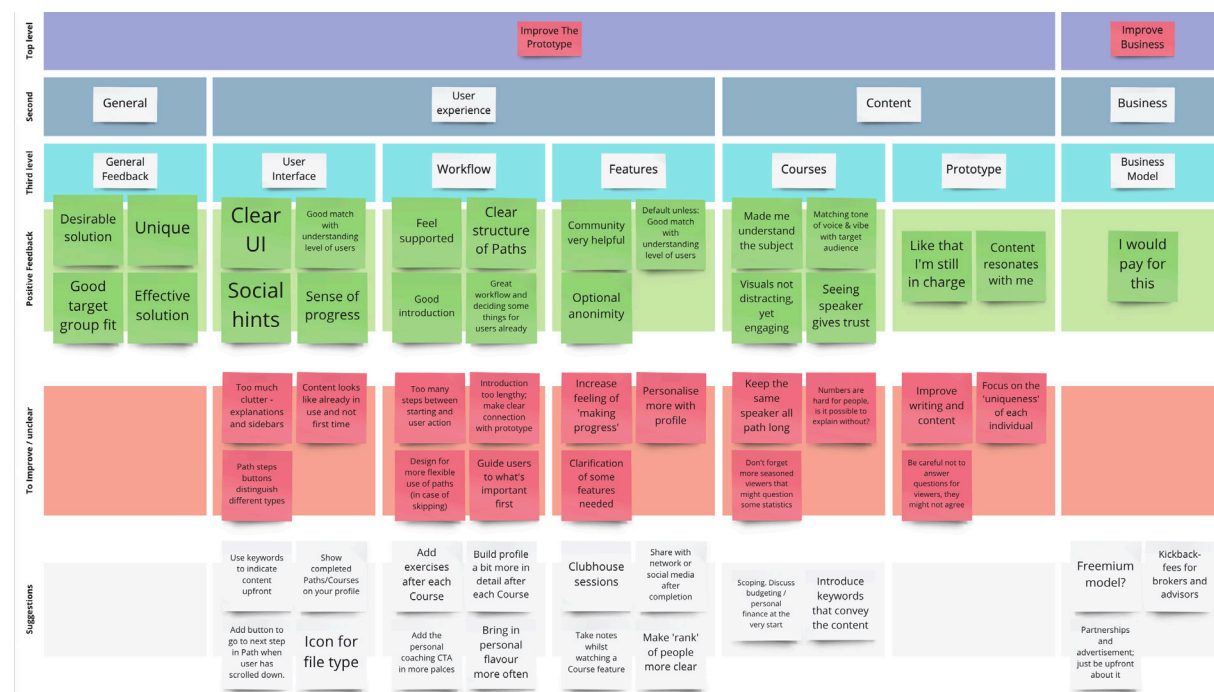


Figure 81. Affinity Diagram of user feedback.



So, what can be concluded from these two Affinity Diagrams? Let's start with the positive feedback given by users.

## Positive Feedback

Overall, all six users were very positive about the prototype. They deemed it very desirable, with several stating they would absolutely use this, were it available today. Users noticed it

was a unique solution by combining guided learning in a clear and concise way. All deemed it a good fit with themselves (the target group) in terms of use and tone of voice. They also stated they deemed it effective in solving their problem: not being able to get started with investing.

In terms of User Interface, the summary reads: clear UI, nice use of social hints, great matching of the understanding-level of users and a good sense of progress delivered to users. The Workflow was deemed to make users feel supported and not alone, with a clear introduction and clear structure.

Users said the community features were very helpful, they liked the optional anonymity they would have while using the platform. Lastly, they liked the use of defaults: the prototype does a lot of suggestions which are right for most of the users, yet still changeable.

Regarding the Content of the Courses (the videos), user said they really helped to understand the subject. They loved the tone of voice and vibe of the videos, matching well with the target audience. They deemed the visuals to be engaging, yet not distracting. The prototype itself was liked for letting the users still be in charge of their learning and they felt the content resonated with them. Some said

they would pay to use the prototype, were it realized already.

To improve or unclear

No user had a general negative opinion about the MVP.

Some stated that the UI at times had too much clutter, such as the ever present sidebar and the explainer at the top of the page. Nice for the start, but it should be possible to hide them after a while. The prototype was also set up with content in it, as if it was not the first time the user used the prototype (achievements, points, progress). This made it a bit confusing at the start. Lastly, the steps in the Path should be distinguishable in type by design.

Regarding the Workflow, many users noted the same thing: there are currently too many Courses in the Path before it turns interactive with Exercises. Furthermore, flexibility of users that don't want to take every step in the path should be considered and they should be offered a peek into the content of Course via use of keywords to make it easier for them to filter whether a course is worth following or not. Others deemed the introduction too lengthy or said they 'always skip it'. Lastly, users should be guided towards what's most important after leaving the introduction.



Users stated they would like to feel more as making progress, would like a personalized profile they can build on and would like some more clarification of certain features. They suggested that the same speaker should be in all videos of a Path for consistency and to keep the use of numbers low for those that don't have affinity with numbers. They also said to not forget more experienced users watching a video.

Lastly, they said the writing and content of some of the prototype could be improved, as it was now often still dummy text.

### Suggestions

Users suggested to use keywords to highlight content and to add a 'next' button in the bottom of paths. Completed Paths and Courses could be added to profile for social status and show of knowledge. File types could be clarified with icons.

Users furthermore added to add exercises after each Course, to test knowledge and increase interaction. The same could be done for the profile of users, with the decisions they make after each Course. Personal decisions could have a more prominent role too.

Two users mentioned Clubhouse as an interesting platform to host discussion or Q&A

sessions on. A nice-to-have feature would be to be able to take notes whilst watching a Course, though this is by no means a need. A sharing feature is also recommended, either on social media or on the platform itself. Users also asked for more clarification on the rank on social status of other users, to help with the trustworthiness of answers.

Regarding the Courses, a user rightly pointed out that some scoping is in order. This thesis is focused on investing, but that's of course only possible when personal finance and budgeting / saving are under control. The first (optional) lesson in the first Course could touch upon this subject briefly.

In terms of Business Model, users suggested either freemium, advertisements, sponsored content or a system of kickback-fees with suppliers such as brokers or asset managers. This will all be explored further in the chapter 6.

## Designing the MVP

# 5.6 Recommendations & Reflections

## 5.6.1 Recommendations for improvements

Due to time and scope limitations, it was not possible to create another iteration of the MVP to tackle the user feedback. Instead, this chapter on recommendations was written, to offer concrete next steps to further improve the MVP.

### User interface

The existing user interface, though already deemed clear and nice to look at, could be further improved in the following ways:

- Users should be able to hide / minimize the side bar if they wish to do so
- Explainer call-out at the top of the page should be hidden after user has pressed a button "I understand / hide"
- The buttons for the steps in the paths should look different depending on the content of the step. Courses, Profile and Exercise steps should have their own distinctive look
- Keywords should be added to describe

content to users, on the Paths and Courses overviews

- Completed Paths and Courses should be shown as some sort of 'badge' on your profile page, boasting the completion
- On the Path-screens, a "next step" button should be added to the bottom of page

### Workflow

The current Workflow could be improved in the following ways:

- There should be a better balance between Courses and Exercises in a Path. What are currently Exercises will be renamed to 'Your Choice' (working name) pages, where users get to (re)define their choices. Exercises will then be added after completing a Course, with questions regarding the content of said Course. The main aim of Exercises will then be to interact with the user, keep them engaged and test their knowledge in a fun way. Additionally, a personal question to help define their profile could be asked here too.

- With the addition of the keywords previously mentioned, Paths should allow more for skipping steps if users deem necessary, as they will be able to get a better idea about whether the information will be relevant for them or not.
- The introduction should be trimmed in terms of content. Less relevant pages stating what the concept is about should be removed. The rest of the on-boarding should be designed with users that skip introductions in mind
- Along those lines: a smoother transition from the introduction to the first Path should be created. Why not send the user to the first path after explaining what it is?
- To align better with the trend of individualism, it should be highlighted more often how unique each user is, how they can build on their own personal profiles and how they can find their own 'path' in the world of investing. Perhaps Paths should be renamed to Blocks in that regard.
- Deeper, more complex Paths could have recommended Paths to follow before attending this one, to not overwhelm beginners with too much complexity.

Features

- Some additional features were already described in the section above.

- Q&A or discussion sessions could be hosted weekly on platforms as Clubhouse
- Sharing to celebrate the completion of a Path or a Course can drive user engagement and satisfaction
- Being able to take notes whilst watching a Course, with timestamps, is a desired feature
- Increase the clarification of ranks and social status based on your activity on the MoneyMinds platform

Courses

- Keep the same speaker for all the Courses in a Path for reasons of consistency and familiarity to the audience
- Keep in mind both the beginner and the seasoned audience in the content
- Try to minimize the amount of explanations that use numbers, as this can be difficult
- Don't forget the starting point. In the first Course, touch upon personal finance, budgeting and saving briefly for those that don't already do so.

Prototype Content

- The content and especially the writing of this prototype can be further improved. One, because it was often dummy text used to keep creating an elaborate prototype doable in the time available. Two, because the branding and strategy of

the next chapter will add more clarity to the value proposition and the main message.

- Be careful not to answer questions for the users that they should answer themselves. Opinions diverge widely and we don't want to drive away users with different opinions.

### 5.6.2 Reflections

The creation of the MVP, creating the content and testing it with users and experts has been both exciting and insightful. It became astonishingly clear that users really valued the proposed solution and would love it to exist for real, as they were keen to use it. Also others I've talked to about my graduation deemed it a very useful solution and showed great interest. No doubt that this thesis tries to solve a meaningful problem young adults face and so far the solution seems to be a fit.

Apart from users liking the solution and having some great feedback for changes and improvement, something else dawned on the author too.

It was time to stop focusing on further detailing the prototype and take a step back. How did things work out in the bigger picture? How could the solution strategically be positioned, how would the brand be perceived and match with the target audience?

# 06

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## STRATEGY

This chapter shows the creation and design of the Minimum Viable Product (MVP) and its iterations.

6.1 Branding Exercises

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6.2 Brand Manual

---

6.3 Value Proposition

---

6.4 Business Model

---

6.5 Reflections

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# 6.1 Branding Exercises

## 6.1.1 Brand sprint

Next, it was time to think strategically about MoneyMinds. Though designs were made and colors were picked in the MVP phase, no clear branding was developed yet. It was of utmost importance to create a brand that resonated well with the target audience and conveyed the right values, in the right tone of voice.

In order to achieve this, a 3-hour Brand Sprint was conducted. The 3-hour Brand Sprint was developed by Google Ventures and mentioned

in the book Sprint (Jake Knapp, 2016). Though normally a team-activity, the author conducted this exercise solo and afterwards discussed his conclusions with relevant individuals, experts and target group alike.

In the next sections of the report, the outcomes of the sprint will be shown.

### OUTCOME 1

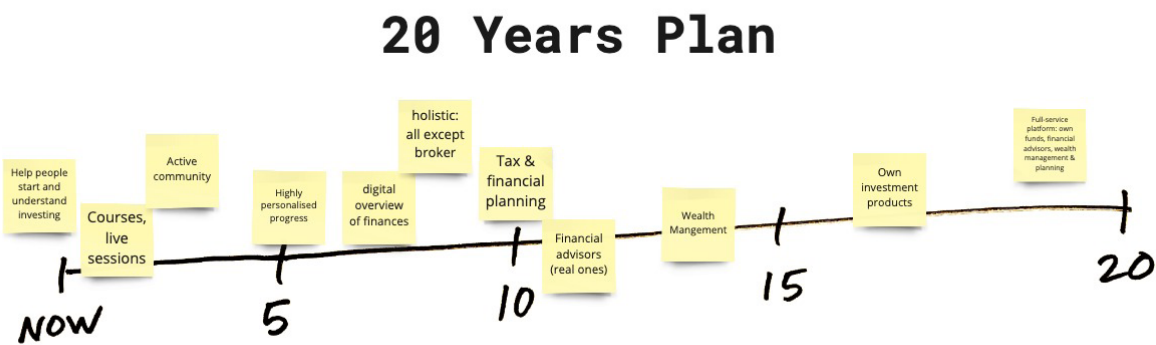


Figure 83. Outcome 1 - 20 Years plan

### OUTCOME 2

#### The Why

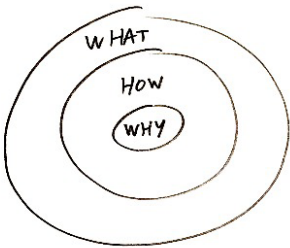


Figure 84. Outcome 2 - The Golden Circle / The Why

### OUTCOME 3

#### Top-3 Values



Figure 85. Outcome 3 - Top-3 Values

## OUTCOME 4

### Top Audiences

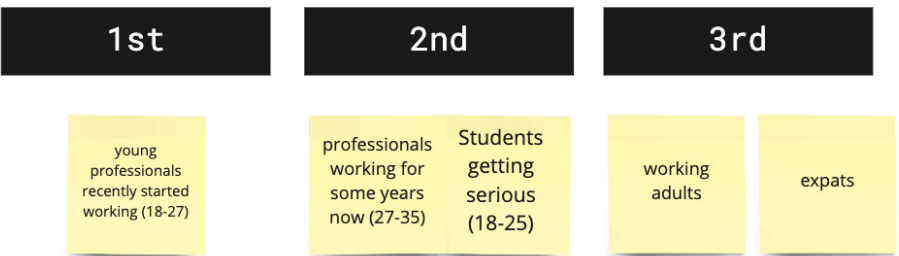


Figure 86. Outcome 4 - Top Audiences

## OUTCOME 5

### Final Ranges

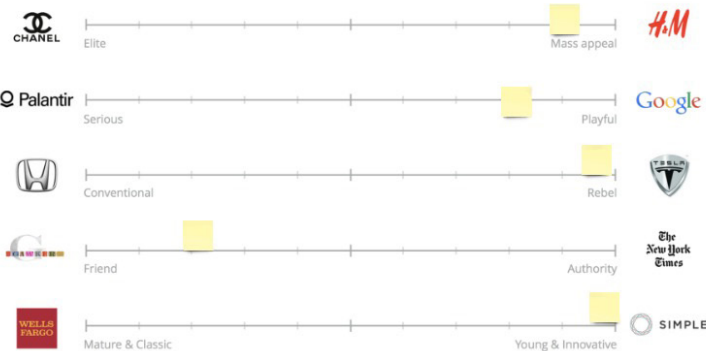


Figure 87. Outcome 5 - Personality Ranges

### 6.1.2 Brand Triangle

The outcomes of the 3-hour brand sprint were used to create the Brand Triangle, consisting of Purpose, Positioning and Personality.

#### Purpose

A brand's purpose, in this model, is sort of its higher reason to exist. What does the brand believe, the "why?". First, 10 Questions about the brand were answered to better define what the brand is about:

#### 1. Why was the brand created in the first place?

- To help people take control over their financial lives, get confident about their financial choices and start building a better financial future for themselves

#### 2. What does the brand fight for?

- Financial empowerment of individuals

#### 3. Who/ what is the enemy?

- Insecurity, ignorance, uninformed choices, not being in control

#### 4. What do the true believers say about their love of the brand?

- It helps me choose, makes me confident, helps me believe in a future where I am in control

#### 5. Why do people love to work for the brand?

- We're helping people to take back control over their financial lives. We're equalizing opportunities between all people, by making sound financial and investing advice available to all, + offering tools for the right mindset tailored to each individual's unique journey.

#### 6. What should never ever change about the brand?

- Made for the people. Honest, transparent, trustworthy. Should be a fun brand to interact with and a fun place to work at.

#### 7. What is the epicenter of the brand's passion?

- Empowering others, helping them open their eyes. Giving financial confidence to all.

#### 8. Why would people give a damn if the brand ceased to exist tomorrow?

- They would feel more alone in their upcoming challenges.

#### 9. How does the brand behave during rocky times?

- Stick to its believes. Honest about it struggles, asking for help of the people it has helped.

#### 10. What keeps the brand up at night?

- How can people best be helped? How do

miro

miro



we make it accessible for all? What do people need most to take control of their life? How do we convince people that we help them make money while we ask for money?

After the 10 Questions and a lot of brainstorming, the following purpose was formulated:

If you have dreams for tomorrow, you owe it to yourself to consider how you spend today.

This purpose reflects the following: everyone has dreams for tomorrow. Therefore, everyone should think about how they spend today. They owe that to themselves, and their dreams. They need to think about taking responsibility over their actions and how they might impact their future. Lastly, spend has a double meaning here. Spending time and spending money. No one is forced to live frugally and to save all their money and invest it. But, you do have to be aware of the decisions you make. Spending money now means you can't spend it later. And if you thought about it and decided you'd rather spend it now, then that's a great outcome. But think about it. And then decide what you want to do. This is what the MoneyMinds brand stands for: empowerment to be financially confident and responsible.

**Positioning**

Next up is the positioning. This is stating very clearly what the brand offers and to whom. The "what?". The strategy to make a brand occupy a distinct and credible position, relative to competing brands, in the mind of the customer. The method followed, first shown to the author in lectures of BPC during the Masters, given by Ir. G.H. Berghuis and Prof. dr. R. R. R. van der Vorst, uses a sentence to convey all this information.

The sentence goes as follows:

For [target group], [brand] offers [product category] that is [features], gives [functional benefit] and gives people the [emotional benefit] so they can be [self-expressive benefit].

It is important to position your brand clearly along all those different layers and resonate with your audience on all levels, from offering something to want to making them feel how they want and enabling them to show themselves to the world, in a way that they want.

For Young Adults, MoneyMinds offers financial education that is mindset focused, gives fundamental knowledge and gives people the confidence to be independent.

**Personality**

To determine the brand's personality, the method follows a model of Brand Archetypes by Mark & Pearson (2001), based on the Archetypes of C. Jung.

After the session it became clear that the MoneyMinds brand has a Hero Archetype, meaning its goal is to empower others to become all they can be. It is helpful, caring, liberating, empowering, guiding and honest.

**Contrarian Branding**

Prof. dr. R. R. R. van der Vorst's book Contrarian Branding (2017), describes standing out by camouflaging the competition. Instead of comparing your product to competitors based

on a relative scale, such as cheapness or quality, it's better to create absolute differences between you and the rest of the world. For MoneyMinds:

New Standard	vs	Old Way
Community	vs	Institutes
People	vs	Establishment
Personal	vs	Generic
Honest	vs	Dishonest
Transparent	vs	Shady
Guided	vs	Overwhelming

MoneyMinds stands out because of Guided Self-reliance that they offer, two seemingly contradictory elements to it.

The 3 P's: Purpose, Positioning & Personality



Figure 88. Brand Triangle - The 3 P's

# 6.2 Brand Manual

## 6.2.1 Brand Manual

The following Brand Manual was compiled from the branding exercises, as well as the insights from the target audience. To goal was to create a clear and engaging brand, that resonates well with the audience in appeal, tone of voice and

visual attractiveness. The brand manual will be used to create all other visual assets later on, from the website to the video lessons and the social media content. The full brand manual can be found in appendix F or through <http://bit.ly/MMBrandManual>.

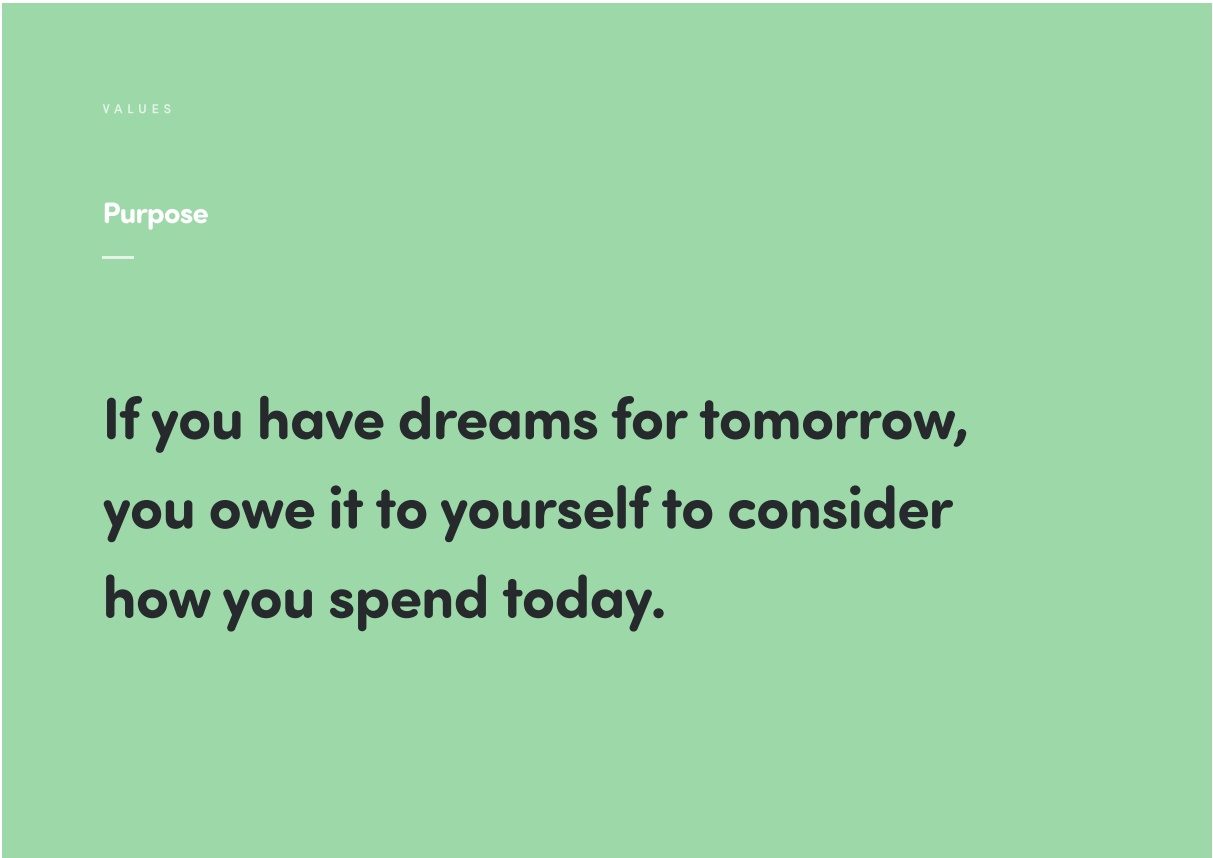


Figure 89. Brand Manual - Purpose

VALUES

Vision

Every individual should have the confidence and knowledge to consider the impact of their choices on their (financial) future.

Mission

We teach people in an engaging way to learn how to make choices and be conscious about their finances.

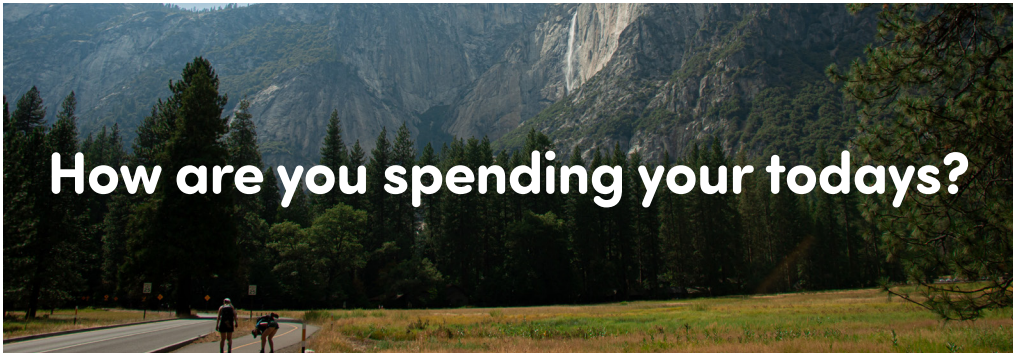


Figure 90. Brand Manual - Vision & Mission

LOGO

Logo Construction

The logo contains the logomark and the wordmark. Both elements have been exactly positioned and proportionally fine-tuned.



Figure 91. Brand Manual - Logo Construction

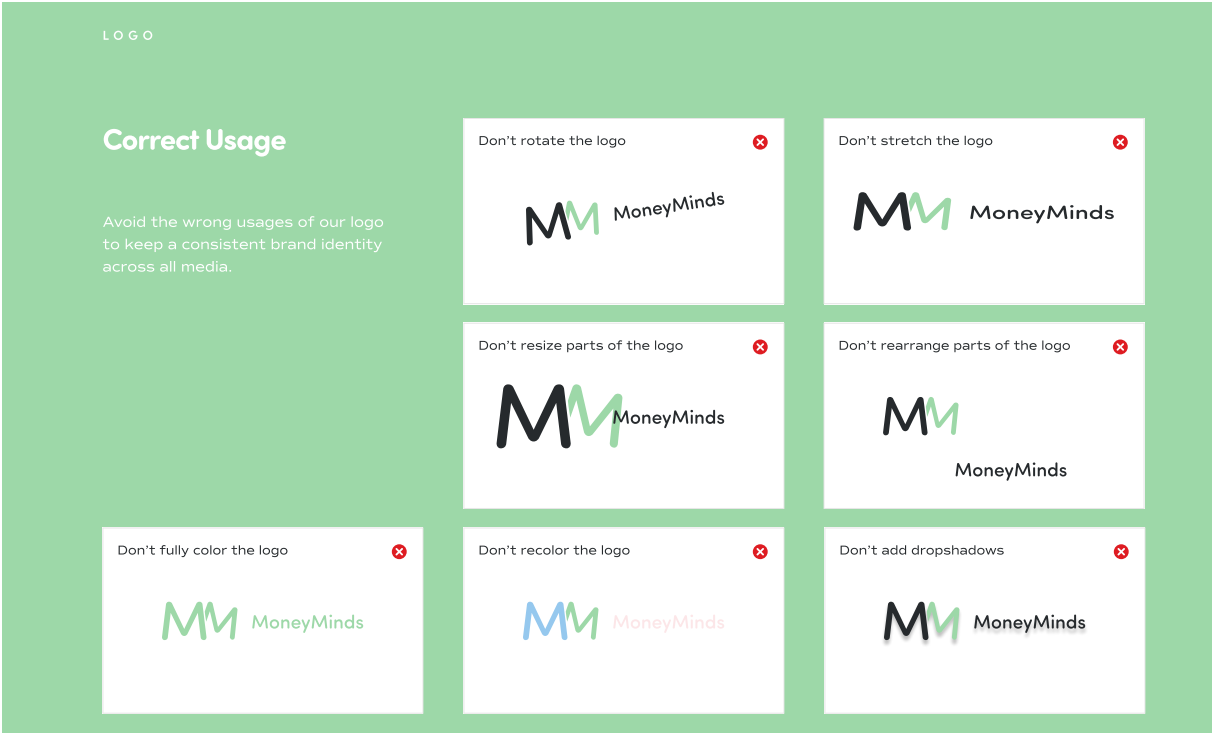


Figure 92. Brand Manual - Correct Usage of Logo



Figure 93. Brand Manual - Colors



Figure 94. Brand Manual - Color Reasoning



Figure 95. Brand Manual - Typography

PHOTOGRAPHY

## Photography

MoneyMinds' photography is honest and sincere. We show real people, inspiring landscapes and exciting settings.

### Inclusivity

It is important that all audiences will feel identified when looking at our photography. We like to show people of all ethnicities on our photos. Furthermore, we like to break with stereotypes. A group of investors on our materials look the opposite of the average results in Google. No grey men in suits, but young people, many of them female. Power to the people. Everyone can be a succesful investor.



A group of MoneyMinds investors



A group of MoneyMinds investors

Figure 96. Brand Manual - Photography

EXECUTIONS

## Stationary

MoneyMinds stationary



Figure 98. Brand Manual - Stationary

ILLUSTRATIONS

## Illustrations

Illustrations for the website and other media are taken from the website [storyset.com/brq](https://storyset.com/brq). The attribution 'Illustration by Freepik Storyset' should be placed in the footer when used, linking to <https://storyset.com/>.

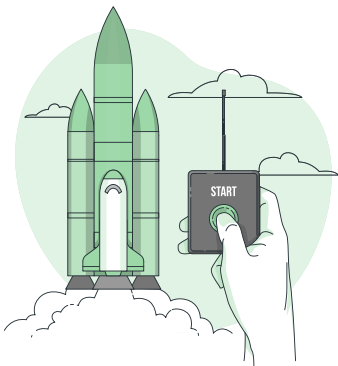
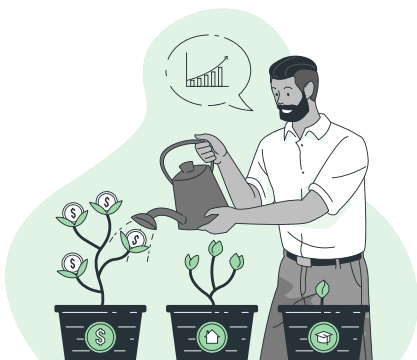


Figure 97. Brand Manual - Illustrations

EXECUTIONS

## Book

Book on the MoneyMinds Method co-written by J. Frankena and A. Boogaard

Cover illustration is an altered copy of cover image of the book 'The Psychology of Money' by Morgan Housel and is used for illustrative purposes only.



Figure 99. Brand Manual - Book



# 6.3 Value Proposition

## 6.3.1 Value Proposition

Figure 100 below captures the value proposition of MoneyMinds in the well-known Value Proposition Canvas. On the right hand side we see the customer. We see which jobs he wants to have done, the customer jobs, which are learning about investing, gaining financial

confidence, financial decision making and discussing their decisions with others. There are certain gains the customer expects or desires, such as trust, knowledge, confidence, independence, empoweredness and peace of mind. On the left hand side we see the Gain Creators of the service and how they provide

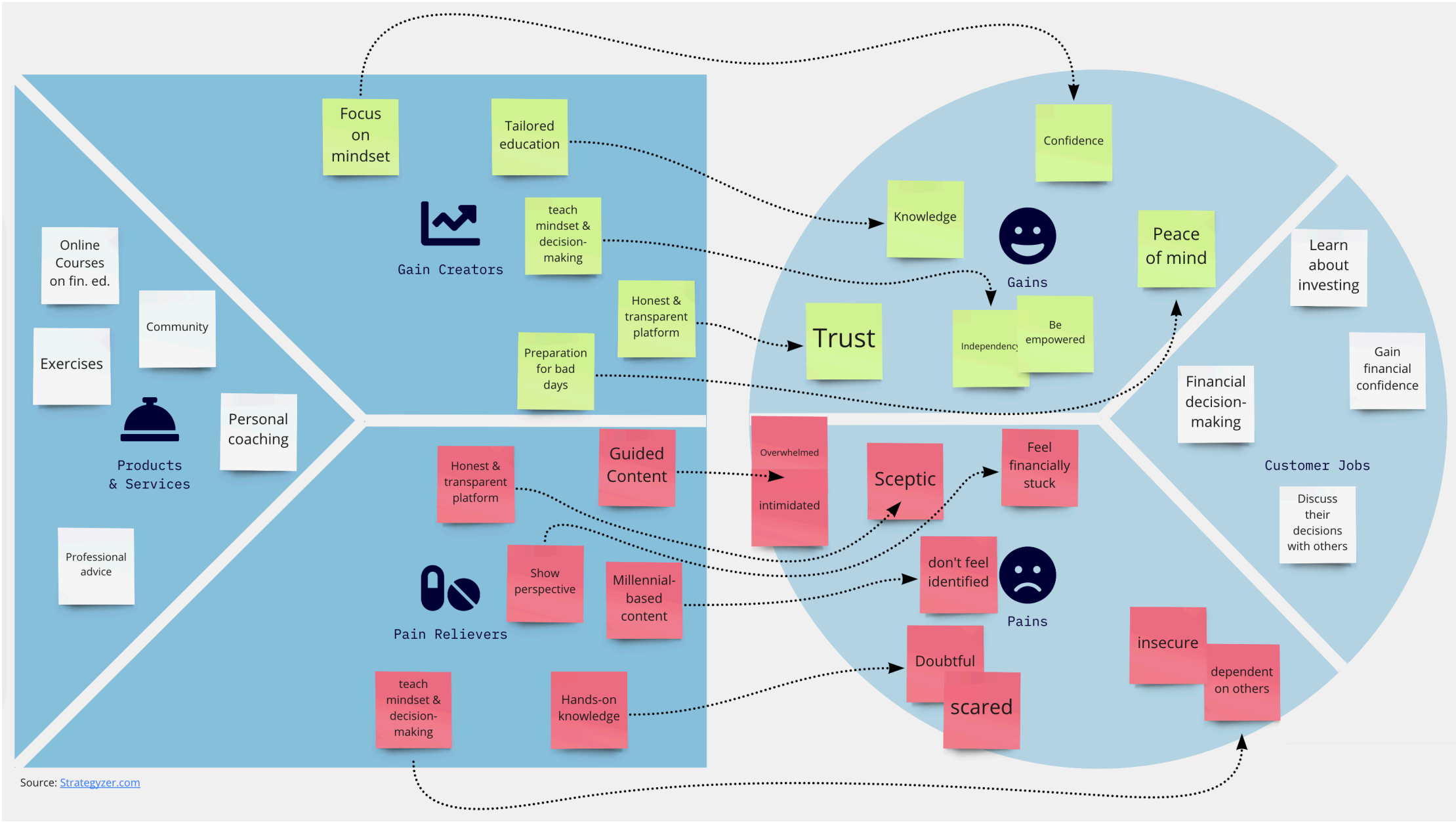


Figure 100. Value Proposition Canvas by Strategyzer.com

these desired gains. In our case, this is done by focusing on the right mindset, offering tailored education, teaching decision making, preparation for bad days and offering an honest and transparent platform. The bottom half of the diagram follows the same pattern of Pains the customer has right now, and how the solution will solve these Pains, through Pain Relievers. Lastly, there are the Products and Services. These are the online courses, the exercises, the community, personal coaching and professional advice that are being offered.

Strategy

6.4 Business Model

6.4.1 Business Model

For the creation of the business model, a model by strategyzer.com was used in Miro. The snapshot displayed below in figure 101 might be too detailed to read, so the most

important connections will be explained in text, in this chapter. There will be two kinds of users, free and premium. Free users can access a limit amount

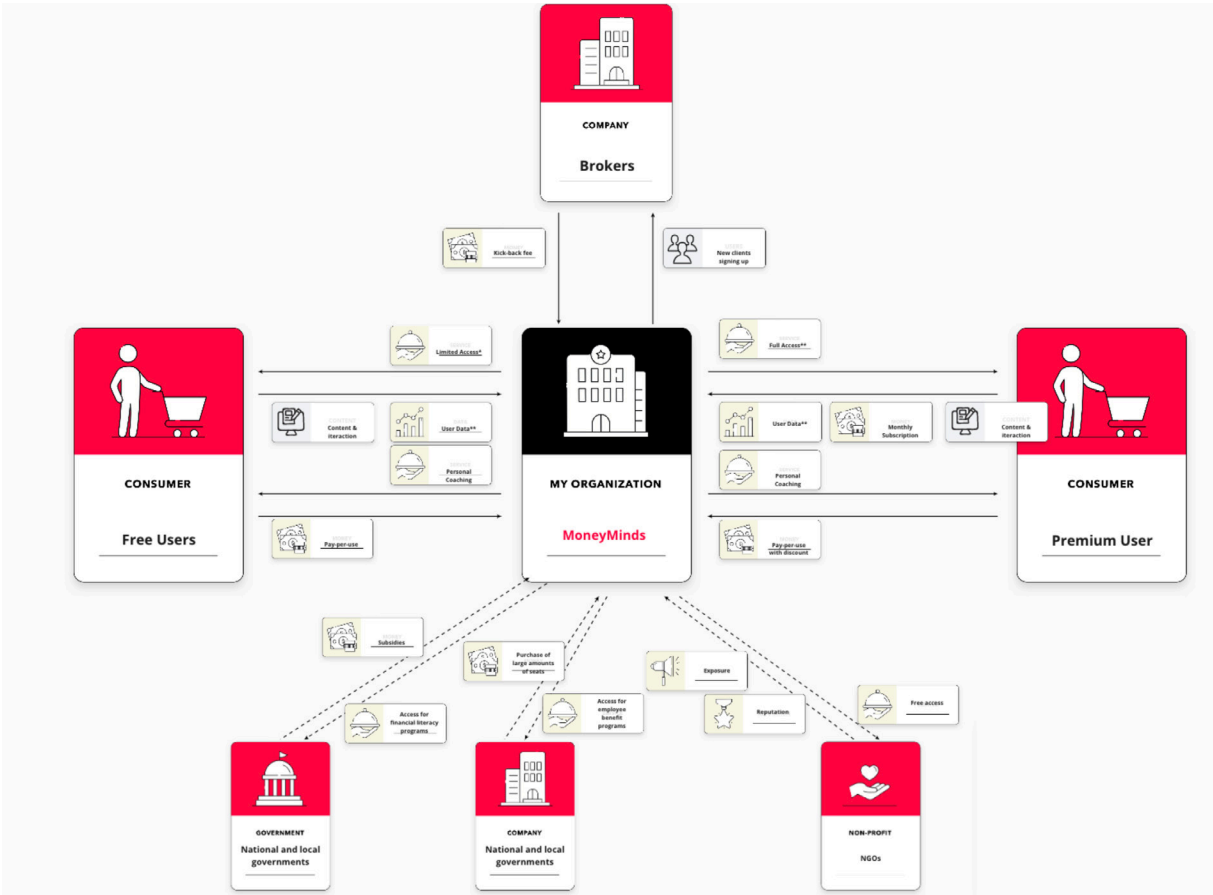


Figure 101. Business Model by strategyzer.com

of content (courses, exercises and such), whereas premium users pay a monthly fee to have full access to the platform. This includes all Paths, Courses and Exercises, as well as additional updates, more in-depth material and timely updated materials such as newsletters and more. In return, MoneyMinds gets the user data, the monthly fee for premium users, and the users' participation and content creation on the platform. Furthermore, both users have the option to pay for personal coaching or live lesson sessions, on a pay-per-use basis. Furthermore, a structure of kick-back fee, or affiliate marketing, can be set up with brokers across the world. MoneyMinds will offer honest reviews of these brokers and leave it up to the user to decide where they want to sign up for their investing needs. Then, when they do sign up somewhere, the platform will receive a small compensation for it. It is of utmost importance that this will be transparently communicated to the users.

Lastly, extra revenue and value streams can be generated as follows. National and local governments could give subsidies to MoneyMinds, which in return will give access to the platform for special groups. For example financial literacy programs or other noble initiatives to empower people fit well with MoneyMinds' offering and believes.

Companies could also include MoneyMinds' in their employee benefit programs. They would buy access to a number of premium seats, for which MoneyMinds provides a discount.

Lastly, MoneyMinds could work with NGOs that work to achieve financial literacy. Free access could be given, in return for a good reputation and exposure.

## Strategy

# 6.5 Reflections

## 6.5.1 Reflections

The strategic chapter means that this graduation thesis has come to an end. I can conclude that the strategic and especially branding parts of this chapter were very necessary for the project as a whole. Before, we had great research and insights, a detailed MVP, but no clear way forward. After this chapter, I feel like there is a clear path to follow, even after graduating. I'm inspired to give everyone the courage to become financially confident. To make informed decisions about their financial present and future. That's why I decided I would like to continue working on MoneyMinds after the thesis is completed.

I regret not being able to create a launch strategy or a 90-day plan during this thesis due to time limitations. I do hope to create a simple landing page before the actual thesis presentation. If you're reading this afterwards, check out [moneyminds.io](https://moneyminds.io).

# A

# REFERENCES

A list of all references used in this thesis.

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# B

## APPENDIX

The appendix of this graduation thesis, containing all extra information and resources.
















A	User Survey
C	Expert Interview
E	Research Plan
G	Original Project Brief
























B	User Interview
D	Content of Path 1
F	Brand Manual










### Appendix

## A. USER SURVEY

### A.1 Survey Questions

Question by question		
All time		
Questions	Views	Drop-off (?)
 A Survey on Investing	390	-182 (47%)
*  1 How old are you?	208	-14 (7%)
 2 In which country do you currently live?	194	-4 (2%)
*  3 What best describes your living situation?	187	-2 (1%)
*  4 Do you currently have children?	185	-2 (1%)
*  5 What is currently your main source of income?	186	-2 (1%)
 A Now let's get started with some questions about saving money.	183	-1 (1%)
*  6 When I was young, someone taught me about saving.	182	-1 (1%)
*  7 Do you save a part of your income?	185	-1 (1%)
*  8 What is the main reason you save money?	159	-2 (1%)
*  9 Where do you place your saved money?	158	-2 (1%)
*  10 How do you feel about the interest you get from your savings account?	92	0
*  11 What are you saving for?	157	-3 (2%)
*  12 Why don't you save money?	26	0
*  13 If you could save, what would you save for?	26	-1 (4%)

 <b>B</b>	Cool. Let's talk about the money.	175	-2 (1%)
*  <b>14</b>	Money is very important to me	<div>Edit</div> 174	-1 (1%)
*  <b>15</b>	How would you describe your relationship with money	175	-1 (1%)
*  <b>16</b>	I am worried about the future	174	-2 (1%)
*  <b>17</b>	I am worried about having enough money in the future	173	-1 (1%)
*  <b>18</b>	What would you rather have?	172	-1 (1%)
 <b>C</b>	Okay, great! Now a few questions about investing.	172	-1 (1%)
*  <b>19</b>	When I was young, someone taught about investing.	172	-1 (1%)
*  <b>20</b>	What describes your situation best?	173	-2 (1%)
*  <b>21</b>	Why do you invest?	80	-1 (1%)
*  <b>22</b>	Why are you not investing?	86	-2 (2%)
*  <b>23</b>	You answered " ____ " What would you need to overcome this, in order to start investing?	85	-2 (2%)
*  <b>24</b>	Why did you stop investing?	<div>Edit</div> 65	-3 (5%)
*  <b>25</b>	Which of these have you heard of before?	168	-4 (2%)
*  <b>26</b>	In which do you (or did you) invest yourself?	87	-1 (1%)
*  <b>27</b>	Which of these brokers and/or platforms do you (or did you) use?	87	-1 (1%)
*  <b>28</b>	How important is the easy of use of the platform for you?	86	-1 (1%)
*  <b>29</b>	How satisfied are you with the easy of use?	84	-1 (1%)
*  <b>30</b>	How well do the platform's current features enable you to invest?	84	-1 (1%)
 <b>31</b>	If you could improve the platform you use in any way, how would you do it?	84	-3 (4%)
*  <b>32</b>	How did you first get introduced to investing?	158	-1 (1%)
*  <b>33</b>	Who do you know that invests?	159	-1 (1%)
 <b>34</b>	Sustainability and social impact	159	-1 (1%)

*  <b>34a</b>	Are you powering your home with Clean Energy?	157	-1 (1%)
*  <b>34b</b>	How important is living a sustainable life for you?	157	-1 (1%)
*  <b>34c</b>	I only want to invest in sustainable companies	157	-1 (1%)
*  <b>34d</b>	The social impact of my investment choices is very important for me	159	-1 (1%)
*  <b>34e</b>	I believe that, compared to regular companies, investing in sustainable companies will	158	-1 (1%)
*  <b>34f</b>	What would you rather have?	156	-1 (1%)
*  <b>35</b>	May I contact you in the future for additional questions?	158	-2 (1%)
*  <b>36</b>	Great! What's your name?	108	-2 (2%)
*  <b>37</b>	Thank you, ____! How can I reach you?	106	-2 (2%)

# B. USER INTERVIEW

## B.1 Assumptions

Introduction and Segmentation questions

#	Assumptions / Hypotheses I believe that	Critical?	Prioritisation		Score	To verify / will
			Risk	Existing		
TG = target group						
1	TG wants to feel more confident about investing before they start	Yes	High	Low	9	Interview Key Theme  1
2	TG wants to gain more knowledge about investing	Yes	High	High	7	
3	TG would like to be educated on investing	Yes	High	Medium	8	
4	TG prefers actionable knowledge, tailored to them, as opposed to 'broad' or 'general' information	No	Medium	Low	5	
5	TG wants to know the deeper knowledge, the 'why' of investing	No	Medium	Low	5	
6	This knowledge should come from an independent / trustworthy source	Maybe	Low	High	3	
7	TG distrust banks / brokers as they stand to gain from them investing	Maybe	Low	Medium	4	
8	TG would like to not feel alone in figuring all of it out	Yes	High	High	7	
9	TG would like to have the option to learn about investing with peers, as opposed to doing it all alone	Yes	High	High	7	
10	TG would like to have a dedicated community they can fall back on or discuss with	Maybe	High	Medium	6	
11	TG would like to optionally have supervision / someone to watch over their shoulder with them and give advice	No	Low	Low	4	
12	TG would like to learn by doing	No	Low	Low	4	
13	TG thinks 'fint' is a required aspect of learning to start investing	No	Low	Low	4	
14	TG thinks learning in a safe and controlled way is required	No	Low	Medium	3	
15	TG would like guides that would help them to get started with investing	Yes	High	Medium	8	
16	TG would like investing to be engaging instead of boring	Yes	Medium	Medium	7	
17	TG doesn't want advice what to invest in, but advice on how to invest	Maybe	Medium	Low	6	
18	TG doesn't want to pay a % of money invested, as this is what brokers do, and will create mistrust.	Maybe	Medium	Low	6	
19	A freemium model works, in which the basic parts are free and additional content paid	Maybe	Medium	Low	6	

Figure B1. Assumptions with prioritisation

## B.2 Questions

Introduction

- Hi! My name is Jonne I am currently doing my graduation thesis at the TU Delft. My project is about helping young people to start investing long-term. Thank you for taking the time to talk to me, I believe that talking to you will be very insightful. With your permission, this interview will be recorded for later analysis.
- Before starting, Could you tell me a little bit about yourself? Do you work and where? Do you have any experience with investing?

### Key theme 0: Starting / Problems

- Would you like to start investing?
- What has stopped you from taking the step?

### Key theme 1: Confidence

- Do you feel confident enough to start investing? Why yes / no?
- Would you need to feel more confident in order to start?
- What would you need to become more confident?

### Key theme 2: Knowledge

- Do you feel like you know enough about investing? Why yes/no?
- Would you like to learn more about investing?
- What would you like to learn about?
- Would you want to know general information / or information specifically relevant for you and your situation?

### Key theme 3: How to learn

- How would you like to learn about investing?
- How important is having fun while learning about investing for you?
- Do you think investing is boring? Would you like it not to be?
- Would you prefer practicing before doing the real thing ?
- How would you feel about having guides that would help you get started to invest?
- How would you feel about having to do exercises that help you understand investing?

### Key theme 4: Trustworthiness

- Do you know any brokers, companies who you can invest with?
- Do you feel these companies come across as trustworthy to you?
- Brokers charge you a % of money. Knowing this, how do you feel about information

you get from them?

- How important is it for you to know you can trust the information you're reading? Why?

### Key theme 5: The social Impact

- Would you prefer to learn alone, or together with others? Why?
- What would you think about being able to learn and discuss with peers? Why?
- What would you think about being part of a community that is about learning to invest?
- Would you like to have supervision, someone that looks over your shoulders and helps you out?
- Would you be willing to pay for that?
- Going back to your peers. Would you be uncomfortable talking about your investments with friends?
- Or with strangers? Your privacy?
- Would you be okay if you kept the actual money hidden, just see percentages for example?

### Key theme 6: Advise

- Would you like someone to tell you what type of investments would make sense for you?
- Would you like someone to tell you precisely which fund or stocks to buy?

Key theme 7: Solution

- What do you envision it would be the best way to solve the problems or to get you to start investing?
- The idea: a platform where people get together to learn about investing. Independent information, lessons and exercises to learn about investing. Inspiring talks and examples. Your peers to discuss ideas and decisions with. Learn through fun and a feeling of being part of a group. All the guides you need to get started. Optional professional advice.
- Do you think that a solution like this could solve the problems/ get you started with investing?
- Would you use it? What do you think it would/wouldn't work?
- Would you be comfortable with paying a percentage of your investments for information and learning about investing?
- Would you like a service that offers you content for free, with certain paid features?
- How much would you be willing to pay? More than a Netflix subscription or less?

Key theme 8: Extra questions

- Do you think about sustainability when you think about investing?
- If given the choice, would you do good with your money as well as make some more?
- But what if it would give you smaller returns

than 'regular' investing?

- Any comments, questions I should have asked?
- Can I talk to you again later in my progress for user testing?

B.3 Relevant Quotes

What	Type	Who
If it's a course, it's clear you pay for it, as a lot of time has been put into it.	Business model	Bea Estragues
I'd pay 5-9€ for a basic subscription. €25 for a deeper version. Monthly switchable. Maybe a third option	Business model	Bea Estragues
Somewhere between 10-15 € a month. DuoLingo is also 14. If it's too cheap, people don't trust it. Start with a price, don't do it for free	Business model	Nand Frankena
Great idea! But, depends on how much it would cost me. Investing no priority right now, so don't feel like paying money and time.	Business model	Carlota Bailo
Maybe a free two week trial. If im engage I would pay for it.	Business model	Carlota Bailo
Would pay more than a netflix subscription. Bit less than gym. Need to see the value first. Some real steps, not only learning.	Business model	Carlota Bailo
Flip-side: if you pay money for the service, you might actually start investing, because now you're already paying and it feels like a waste if you don't.	Business model	Carlota Bailo
You can find information on the internet everywhere. I wouldn't be too keen to pay for it. If I'm not sure I would use it.	Business model	Rick Bergkamp
Could be freemium, but I hate that. Can be a real barrier. If a see a subscription, I'll go find something else.	Business model	Rick Bergkamp
Businessmodel is hard. Maybe you offer videos, information and the steps for free. And the lesson paid. You get them to your platform with a lot of free stuff. And then the deeper knowledge is paid.	Business model	Rick Bergkamp
Shouldn't feel like work	Desired solutions	Thijmen Sangers
Background and profile are important	Desired solutions	Carlota Bailo
Prefer T-shaped knowledge. Broad basics, then deeper into topics of interest	Desired solutions	Bea Estragues
Don't like the idea of just a blog.	Desired solutions	Bea Estragues
Would like it like MasterClass. Video. And community / comments after. Check up on progress	Desired solutions	Bea Estragues
Important to learn in small steps, don't jump into the deep end	Desired solutions	Nand Frankena
Would be great to see examples of what people did, which steps	Desired solutions	Nand Frankena
Exercises should be relevant to my situation and not take too long	Desired solutions	Jurriaan van Rijswijk
Make it interactive in the sense of progressing (a % knowledge level for example). Maybe ranks.	Desired solutions	Nand Frankena
People are easier motivated if they start with steps 1-3 done vs on 0 out of 7.	Desired solutions	Nand Frankena
Confidence is something you have to build up over time	Desired solutions	Jurriaan van Rijswijk
Videos are great if they are short summaries of what you need.	Desired solutions	Jurriaan van Rijswijk
Reading is not enough, it's about applying knowledge	Desired solutions	Jurriaan van Rijswijk
Fun is applying what you've learned. If you can see what happens and understand it, that's fun	Desired solutions	Jurriaan van Rijswijk
Explain the UI first with fake order. Demo mode or tutorial in app. Just know once how it works, then real deal.	Desired solutions	Jurriaan van Rijswijk
It's important that it's real when you're learning. Maybe start learning with €100. a course that let's you invest it. 50 here, do this, etc. Not 'dry' like do A do B. Guidance with real money in the real market.	Desired solutions	Jurriaan van Rijswijk
Building wealth should be about being mature	Desired solutions	Jurriaan van Rijswijk
There should be a difference between periodic, serious investing and play money.	Desired solutions	Jurriaan van Rijswijk
Risk. Being confident in the uncertainty. Knowing it's okay to take some risk. Being comfortable with it.	Desired solutions	Jurriaan van Rijswijk
Explain, go do it yourself, discuss. No hand-holding	Desired solutions	Jurriaan van Rijswijk
How do you deal with long terms ?	Desired solutions	Jurriaan van Rijswijk
Mindset is the most important part of it. That would lower the barrier a lot for me, if someone told me "pay yourself first" when I was starting	Desired solutions	Jurriaan van Rijswijk
I started now with the mindset "I want to make money" but if that was "take care of yourself", it's a completely different story. Not about money and getting rich anymore, the 'fighting' element is removed.	Desired solutions	Jurriaan van Rijswijk

Figure B2. Relevant Quotes



35	Value of money is being able to enjoy it.	Desired solutions	Jurriaan van Rijswijk
36	Would like to first learn broad overall beginners knowledge. Then if I find something interesting go deeper into that.	Desired solutions	Nand Frankena
37	Videos - there are a lot of styles and types. Hard to trust. Very difficult when you start from 0. Sometimes people push their own stuff in YouTube videos.	Desired solutions	Rick Bergkamp
38	It needs to be tangible, applicable.	Desired solutions	Carlota Bailo
39	Would like to have options and make my own choices. BUT I would like precise advise from someone I trust and is good with investing.	Desired solutions	Rick Bergkamp
40	I want to know both general information and tailored to me. I know a bit what I want, that's what I want to learn more about.	Desired solutions	Rick Bergkamp
41	It's best if I can apply things. Maybe a practice environment.	Desired solutions	Rick Bergkamp
42	I'd just find answers online.	Desired solutions	Rick Bergkamp
43	YouTube videos out there suck, it's people pushing their own product.	Desired solutions	Rick Bergkamp
44	For 'definitions' I would rather look to the internet. Written by experts who really understand it. In the guide you could put websites to check out.	Desired solutions	Rick Bergkamp
45	Very good initiative. It will help a lot of young investors. Especially if they can choose their own thing, their own way. Mentor, community, movies. Good to give them the choice to learn in their way.	Desired solutions	Rick Bergkamp
46	Expert nice, but value needs to be shown up front without paying yet	Experts	Jurriaan van Rijswijk
47	A concern with expert advise would be to feel 'judged' or that you've made mistakes / are doing it wrong	Experts	Carlota Bailo
48	View expert like a nutritionist or a personal trainer.	Experts	Bea Estragues
49	All seem to like the expert, just not paying for it per se	Experts	Rick Bergkamp
50	I would like a mentor, but he shouldn't be hierarchically above me, only in knowledge	Experts	Jurriaan van Rijswijk
51	Regarding advice it's important if the other person actually did themselves what they advise, otherwise it's not trustworthy	Experts	Jurriaan van Rijswijk
52	Would like mentor, but if I can ask them for advise, not pre-determined check-up moments. Because then I feel like I might have made mistakes and he judges me.	Experts	Bea Estragues
53	Mentor could help a lot. One-on-one moment. If you know the person understands it. Would prefer over class-room teaching.	Experts	Rick Bergkamp
54	Started by FOMO.	Getting started	Thijmen Sangers
55	Word of mouth very important	Getting started	Kevin van Vliet
56	It's about willingness to invest time	Getting started	Thijmen Sangers
57	Speak with your money, you don't buy, you invest.	Getting started	Bea Estragues
58	Risk and safety are concerns that need to be addressed for the starters (two very different things)	Getting started	Nand Frankena
59	How I started investing was talking to other people	Getting started	Jurriaan van Rijswijk
60	Easier to start because people around me were also starting	Getting started	Thijmen Sangers
61	Interest and having time motivated me to start	Getting started	Jurriaan van Rijswijk
62	Just start by doing, practice, try	Getting started	Jurriaan van Rijswijk
63	Getting started is easy, but making the actual purchase is hard	Getting started	Jurriaan van Rijswijk
64	Some already did a lot of work: reading, opening accounts etc. Still, they didn't take the final step of actually buying and setting it up periodically. Why?	Getting started	Carlota Bailo
65	Too afraid to start	Getting started	Carlota Bailo
66	The main barrier is the thought that you can lose money.	Getting started	Rick Bergkamp
67	Not confident enough. Missing knowledge and skill. Just don't know enough about it. Could follow advice, but I wan't to know how it works. It is my money.	Getting started	Nand Frankena
68	Word of mouth plays a big role in selecting where to start	Getting started	Thijmen Sangers
69	Learn with friends rather than strangers	Social	Rick Bergkamp
70	Followed advise of someone close (e.g. a brother)	Social	Bea Estragues
71	Close person gave confidence	Social	Carlota Bailo
72	Learn by asking others for their opinion and approach	Social	Jurriaan van Rijswijk
73	Learn best from people with the same profile, but also from the opposite profile	Social	Carlota Bailo
74	Learn with strangers only when we have had a shared experience together first (e.g. yoga class that sticks around)	Social	Bea Estragues
75	Group is easier, like learning a language with DuoLingo. You see how others are progressing, and how much you've already learnt.	Social	Nand Frankena

Figure B3. Relevant Quotes Continued

76	Some feel like are no peers that go through what they are going through.	Social	Nand Frankena
77	Community only if the value is clear to me	Social	Nand Frankena
78	Talking to people is great because you can ask follow up and get to their reasoning	Social	Jurriaan van Rijswijk
79	For the play part you could have an investment club with friends. This also creates value beyond only monetary	Social	Jurriaan van Rijswijk
80	Communities are nice only if they are relevant and not too big. I'm on reddit, but never engage. No relationship with them.	Social	Jurriaan van Rijswijk
81	It should be about interaction, giving and taking, not only reading, in order for a community to have value	Social	Carlota Bailo
82	I would like to have monthly discussions with 5 other people about how the month went, etc.	Social	Jurriaan van Rijswijk
83	I don't mind sharing, as long as it's in equal share of receiving from the others.	Social	Jurriaan van Rijswijk
84	You want second opinions in your life, affirmation, also in investing.	Social	Jurriaan van Rijswijk
85	Talking with others. Confirmation and discussion of your thoughts. No "you're doing great!" needed, but getting more confident about your choice. It's easier to choose if you know what others are choosing. Future based, like picking a bachelors.	Social	Jurriaan van Rijswijk
86	What about having an idol to look up to	Social	Jurriaan van Rijswijk
87	Investing is a men's world. Boring grey suits. Why? Where's the women? Would be a lot better. Especially the taking care part.	Social	Jurriaan van Rijswijk
88	Again: a peer (brother) helped me get started and shown me the ropes	Social	Bea Estragues
89	Would like to hear of people in similar positions that I am in.	Social	Carlota Bailo
90	Learn with others. I sometimes feel very alone in this process. Thats why I reached out to friends in the same position.	Social	Carlota Bailo
91	Wouldn't participate in a larger community. Would just read, not share. In smaller group I would.	Social	Carlota Bailo
92	Somehow its always guys that invest and girls don't. Maybe your app can change this!	Social	Carlota Bailo
93	I would like a person close to me who knows about investing. That says "come on, I'm going to help you". Gives me a little push. Gives me confidence to actually start.	Social	Carlota Bailo
94	Would discuss with friends, but not strangers. Prefer to learn alone.	Social	Rick Bergkamp
95	I ask friends because I trust them. And it's easier if somebody shows you something.	Social	Rick Bergkamp
96	Brokers are not per se dishonest, but should be very clear in their communication to their customers. They aren't.	Trustworthiness	Carlota Bailo
97	De Giro and Binck are for mature people, while BUX and co are immature.	Trustworthiness	Jurriaan van Rijswijk
98	Transparency. Honesty. Vulnerable. What about older people that want to share their knowledge to younger people. Don't like the celebrity aspect of MasterClass.	Trustworthiness	Jurriaan van Rijswijk
99	Some brokers I don't trust, but some communicate very clearly, those are great	Trustworthiness	Carlota Bailo

Figure B4. Relevant Quotes Continued



# C. EXPERT INTERVIEW

## C.1 Interview Questions

### INTRODUCTION

1. My graduation project is first research and then design, to solve a problem. What I focus on is how you can help young people to invest for the long term. Can you say something about who you are and what you do very shortly before the recording?
2. I immediately thought of you on this topic, from our conversations in the past and of course your articles, especially “let me convince you to start saving”. I want to explore with you what investing can do for your financial situation in the future, and how young people can be convinced to get started.
3. How does investing fit into the bigger financial picture as an individual?
4. Spend first or set aside for investing first?
5. Why stocks?
6. How can you best take care of your future self today?

### STARTING

1. When we talk about ‘the layman’ what do you give him to start? What’s most important?
2. What is the biggest resistance do you think?
3. What do you think would be the best way to get around that?
4. How can you help people? Keeping on track, making sure they don’t sell at an emotional moment?

### ADVICE

1. If you could give one piece of advice to young investors, what would it be?
2. What if you could say something to yourself when you were 20?
3. What makes a good investor?

### INVESTING

1. What is a good investment?
2. What are typical pitfalls to watch out for?
3. How can you prevent them?
4. What is the best way for the inactive

layman to invest? Funds? Hand over? ETF?

### MY IDEA

5. Here’s the summary of my idea that I want to validate with you and get your opinion on.

# D. CONTENT OF PATH 1

## D.1 Content

### 1. Why Investing?

Why is it necessary to invest:

- Low savings account interest
- Inflation

Compound interest

- Paper example

Goals / Freedom

#### Reasons to start

Think about the future. What do you see? A car, a house or that one trip that you've always wanted to make. Maybe you want to retire comfortably one day, or you're simply making sure you have enough for a rainy day. All these goals are reasons people save money.

However, at MoneyMinds, we look at it differently. More than helping you to achieve your goals one day, we see money as a tool that can liberate us.

If you have enough money to live comfortably, without having to worry about, you can do

whatever you want. Don't like your job? Quit today. Don't like where you live? Change it.

It is fundamental to understand what money is about. It is not some number in your bank account. The greatest thing money can buy you, is control over your time. Ultimately, money is about freedom.

Investing is a great way to work towards that freedom. Ready to learn about it?

#### Why is it necessary to invest?

I'm saving money, why do I have to invest? Well, saving money is great, but your money isn't really doing anything for you. Why?

#### Interest rates & inflation

Currently, the average interest rate on a European savings account is about 0,01%.

#### \*Show example Graphs\*

So, you're actually losing xyz,

### The alternative: investing and exponential growth

Investing is a great alternative to saving, as it can give you a lot more returns than the 0,01% interest rate. Before we get into the details of investing, we first need to understand exponential growth.

Imagine having a piece of paper of 1/100th of a centimeter thick. If you stack 50 pieces of top of each other, how thick is that pile? It probably won't surprise you the answer is 50/100th cm or half a centimeter.

Now, imagine having one sheet of paper of the same thickness. Assuming it would be very large and you'd have enough energy available to fold it 50 times, how thick would the result be?

Take a guess. This question is very hard to get right, because humans are very bad at understanding and estimating exponential growth. The right answer?

About 112 million kilometers. Don't believe me? Put "0,0001 \* 2^50" in your calculator. For your reference, the moon is about 384 thousand kilometers from the earth. So, we'd have about enough to go to the moon, back to earth and back to the moon again. 290 times.

Saving your money without getting any return on it can be compared to stacking those papers. Your savings will grow over time, just very slowly, without accounting for inflation and taxes.

Investing your money is like the second example. Your pile of papers grows way more rapidly, albeit sometimes growing rapidly and sometimes decreasing in size. However, with investing, we don't double our investments every year, like in our folding example. The conservative estimate of 7% a year, means that our money doubles about every 10 years. Why? Because of compounding.

#### Compound interest

Let's say you invest a €1.000,- for 7% a year. After the first, you'd have €1.070,-. But now this €70,- that you made, will start creating more on its own: the following year you receive 7% over €1.070,-, which is €74,90 instead of the €70,- of the first year. This €4,90 extra, is the effect of compounding, of getting interest on your interest! Your money is literally working for you, creating more! This might seem minor at first, but it does stack up massively over time.

#### \*show graph over time\*

## 2. Why invest in stocks?

A lot of options: why stocks?

- The stock market is the average of actual companies, that are part of the real economy. You are investing in a business, that does what companies do: creating value and receive money in return. So owning a stock is owning a part of the future cash flows (earnings) of a business.

How do companies work and finance themselves?

- Debt: bonds
- Give away equity: stocks
- Shareholders & rewards (dividend, reinvest in company, acquisition)

## 3. The Stock Market and why stocks go up

- Aggregate of companies
- Indices
- Why does it go up? (profits, dividend and valuations)

## 4. Why are markets volatile? (risk)

- Earnings grow (but not linearly)
- Emotions
- There's an expectation in the price

## 5. How to invest and what to invest in

- Individual companies

- Indices
- Passive (simplified)
- Active (simplified)

## 6. Sustainability (simplified)

- SDGs
- ESG
- Exclusion

## 7. Common misconceptions: Investing ≠ speculating

- Short/long term
- Diversifying
- Misconception
- How hard is it to reduce index funds to 0

## 8. Exercise: your choice

- Risk → bonds equity ratio
- Sustainability → ESG y/n
- Passive fund suggestion

## 9. Where to invest: brokers (finner)

- Comparison

## 10. Exercise: Sign up for a broker

## 11. Exercise: Go invest!

## Appendix

# E. RESEARCH PLAN

## Background information

### Context

Conducting my graduation thesis around 'helping young adults to start investing'. Prototype is being developed. It should be researched if this prototype is indeed desirable and solves user needs and resolves user pains. Furthermore, the usability of the prototype should be tested.

### Problem definition

A prototype was developed based on the outcomes of the research phase, the pains of users and the list of requirements that came out of that research phase. It is currently unclear if the created prototype (MVP) sufficiently solves the user needs and whether it is usable enough.

### Research objectives

1. Discover user's motivations behind using the MVP to start investing
2. Uncover the user behaviour when using

### MVP

3. Identify the pain points users are encountering during the process of using this MVP
4. Uncover other solutions that people use and might have features that should also be in this MVP

### Impact

1. Provide opportunities for improvement of the MVP's user experience
2. Translate insights into actions that can help me improve the MVP and potentially create sharper value proposition
3. Get insights into (a) viable business model(s)

## Research questions

Which are the key questions that I will need to answer with this research study? Which are examples of interview questions to ask to the participants?

**Objective 1: Discover user’s motivations behind using the MVP to start investing**

**Research questions:** What are the user’s motivations behind using the MVP to start investing? Why not on their own?

*Examples of interview questions:*

- Think about the last time you were in a situation where you to start investing. Walk me through the entire process.
- Explain if and how you completed the task of starting with investing and what did you like/dislike about it.

**Objective 2: Understand the user behaviour whilst using the MVP**

**Research questions:** How does the user behave whilst using the MVP? Do they understand which are the steps to follow intuitively? Why/why not? Any other applications they compare it with?

*Examples of interview questions:*

- Can you explain to me how the experience went when...
- Starting to use the app (introduction)
- Navigating through the screens
- Exploring the path “Starting with Investing”
- ‘Using’ the social features

**Objective 3: Identify the pains users are encountering during the process of using this feature**

**Research questions:** Which are the pain points that users encounter during the process of using this MVP? How/what they would suggest to change to make the experience better?

*Examples of interview questions:*

- Describe the experience you had when using this MVP.
  - What was it like?
  - Did you have any struggles? How did you solve it?
  - What would be the ideal scenario for this MVP?
  - How would you change or improve the MVP?

**Objective 4: Uncover other solutions that people use and might have features that should also be in this MVP**

**Research question:** Which are other services that offer the same functionality? Is there any example of success? What makes it a good service?

*Examples of interview questions:*

- In which other solutions do you know that solve a similar issue? Could you give an example of the last time you used them?

- Which ones do you prefer? Why?

**Research methods**

Which is the method that I’ll use to conduct this research? Which are the interview guides, tasks I will use to conduct the usability test?

**Primary research**

- **User interviews:** To understand the user’s motivations and why they would like to use a tool like this. To understand their awareness of the existence of such a tool.
- **Usability test:** To understand the overall user experience of using the MVP as well as the strengths and weaknesses.
- **Post-session interviews:** A final interview to ask other questions that were not covered elsewhere. Post-session interviews are useful to get a feel for the overall experience.
- **Expert interviews:** The expert interviews will help to understand if the MVP is desirable and viable, according to the opinion of those in the Asset Management industry.

**Target user segment**

(Which are the target user segments that will be included in this research? How many people (from each segment) do I need to talk to and

which are their main characteristics? )

Common characteristics: Millennials, tech-savvy, 23 to about 35, mostly on the young end

- User segment A (x3): Participants that I have interviewed before during the research phase
- User Segment B (x3): Participants that I have not interviewed before during the research phase
- User segment C (x2): Industry experts, people well-versed in finance and investing lingo and mechanics

**Logistics**

(when will the research start? How long will it take? What’s the budget for the research? What are the resources? Which tools are we using, and where can we find them?)

**Timeline**

- Research starting date: 31 of March
- Research plan creation and review: 31 of March
- Recruitment begins: 31 of March
- Interviewing begins: 31 of March
- Interviewing ends: 14 of May
- Synthesis begins: 15 of May
- Synthesis ends: 20 of May
- Report presentation for the day: 21 of May

Tools

- Project management: Notion
- Usability testing: Lookback (remote), Figma, Zoom
- Analysing data: Miro, Notion

Resources/Links to documentation

[Figma Prototype](#)

2. USABILITY TEST

Screening

- How old are you?
- What is your study/profession?
- Are you currently investing?

Pre-test

...if yes...

- Since when are you investing?
- Did you ever use an online tool to help you start investing?
- Why/why not?
- Would you want to/need to?
- How did you learn about investing?

...if no...

- Why are you not investing yet?
- Do you want to start?
- Did you ever hear about an online tool to help you start investing?
- Would you want to use it?

- Did you ever try to learn about investing?

List of tasks for the usability test:

- Starting to use the app (introduction)
- ‘Using’ the social features
- Navigating through the screens
- Exploring the path “Starting with Investing”
- Completing the path (reach success screen)

Post-test:

- What was your overall impression?
- What was the best/worst thing about it?
- How would you change the usability?
- How would you compare the effectiveness of this MVP to help you get started with investing to other existing tools/resources?

NEXT STEPS

What’s next? What happens after finishing the research? How is the information going to be presented? How to sort out the findings in an accessible place?

Explained in step 3 “Translating findings into insights”

3. TRANSLATING FINDINGS

Translating findings into actionable recommendations is key for the user process. For this thesis, I suggest using the following ones:

Create an Affinity map:

- Convert all the recorded interviews and Usability tests results into digital sticky notes using e.g. Miro
- Organise all the raw data into an Affinity Map with different key themes (and colour-codes)
- Create arrowed connections between interrelated insights

Fill in a Value Proposition Canvas

- In order to identify the user’s pains and gains, I would suggest using the VPC canvas - to better understand the customer we are creating value for.

Map user journeys

- To continue, the use of a user journey to understand how the users interact with the MVP. The user journey map would show which are the tasks that a person goes through to use the MVP.

Iterate the MVP

- Implement design changes based on the insights and outcomes

Prototype and test

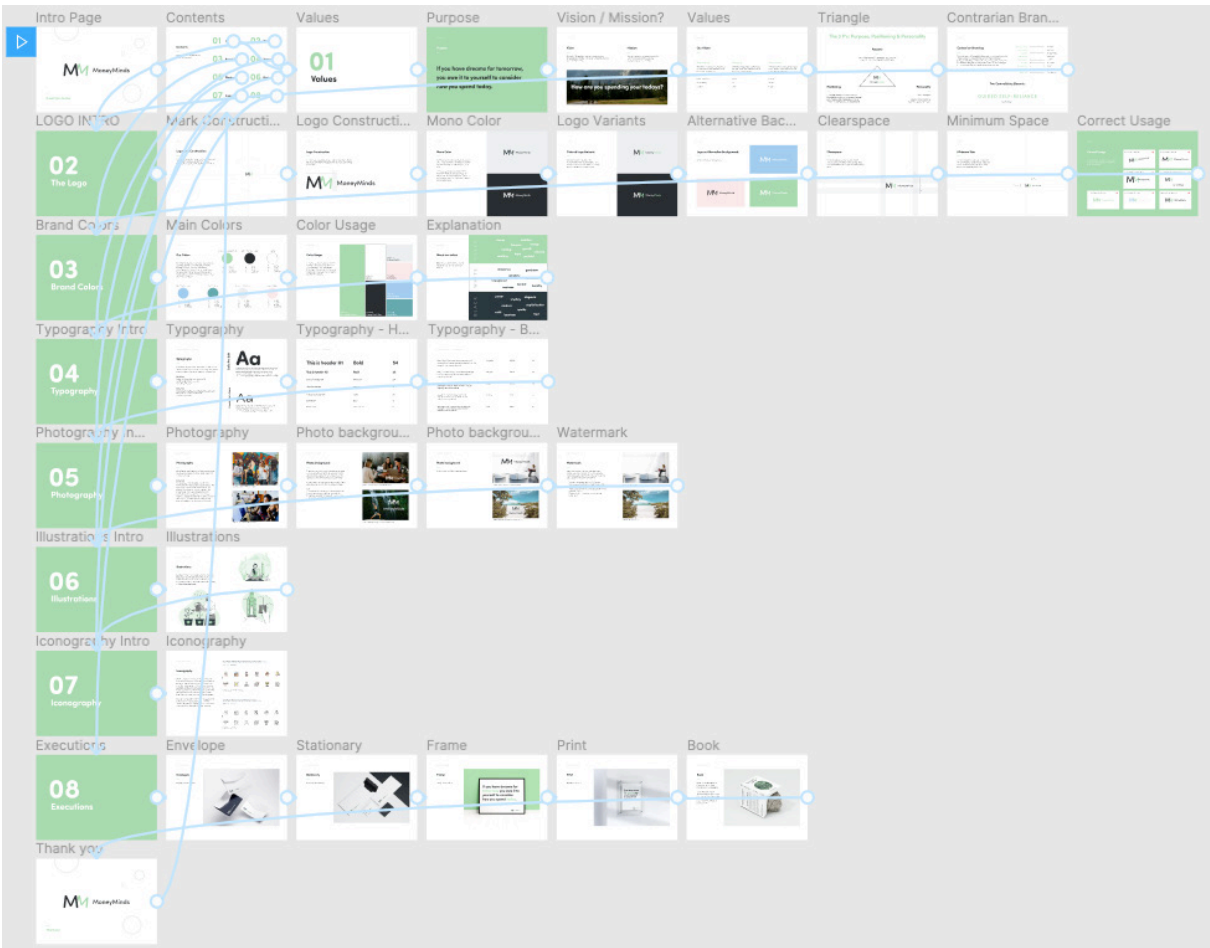
- Following the iterative process of the build-measure-learn cycle technique. Creating new versions of the prototype and validating them with the chosen target segment



# F. BRAND MANUAL

## Prototype in Figma

The full Brand Manual can be seen by using the following Figma link: <https://www.figma.com/proto/AakYDSwd62O5d3EPGn4AuQ/>



[Brand-Style-Guide-Kit-Community?page-id=739%3A0&node-id=740%3A33554&viewport=655%2C453%2C1&scaling=scale-down](https://www.figma.com/proto/AakYDSwd62O5d3EPGn4AuQ/) or <http://bit.ly/MMBrandManual>

# G. ORIGINAL PROJECT BRIEF

DESIGN  
FOR our  
future

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according to the format "IDE Master Graduation Project Brief\_familyname\_firstname\_studentnumber\_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name

initials

student number

street & no.

zipcode & city

country

phone

email

given name

4347994

Your master programme (only select the options that apply to you):

IDE master(s): ☐ IPD ☐ DFI ☒ SPD

2<sup>nd</sup> non-IDE master:

individual programme:  (give date of approval)

honours programme: ☐ Honours Programme Master

specialisation / annotation: ☐ Medisign

☐ Tech. in Sustainable Design

☐ Entrepreneurship

SUPERVISORY TEAM \*\*

Fill in the required data for the supervisory team members. Please check the instructions on the right !

\*\* chair

\*\* mentor

2<sup>nd</sup> mentor

organisation:

city:

country:

comments (optional)

G.J. Pasman

F.M. de Jonge

dept. / section:

dept. / section:

HCD / DCC

DOS / MCR

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair G.J. Pasman

date 08 - 12 - 2020

signature

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IO

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Gert Pasman  
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Date:  
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CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: EC

Of which, taking the conditional requirements into account, can be part of the exam programme EC

List of electives obtained before the third semester without approval of the BoE

YES all 1<sup>st</sup> year master courses passed

NO missing 1<sup>st</sup> year master courses are:

name

date - -

signature

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked \*\*. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

comments

name

date - -

signature

Design a digital tool that helps young adults to start long-term investing

project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 03 - 12 - 2020

14 - 06 - 2020

end date

INTRODUCTION \*\*

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Context / Framework

- Individuals that recently entered working life all experience the same joyful moment of receiving their first paycheck. For many of these young adults, this sudden increase in income doesn't only bring joy, but also questions. What to do with the extra money? Most of them were raised by a generation that taught them to save, and put every extra euro in a savings account. However, saving accounts barely give any interest and might soon even begin charging negative interest. It is clear that, after building up a safety net, the rest of the extra money accumulated should be put to work, to grow and help build toward a more secure financial future. Investing can be a great way to generate extra wealth, but it faces a lot controversy and questions by a lot of young adults. Some perceive it as gambling, or super risky, whilst others simply don't understand what it is about or don't see the benefits. It should be made clear to the target group what investing is about, why it can be a valuable tool for their financial future and how they can best utilize this tool. A possible way to truly influence the target group and to create a successful design intervention would be to convince them of the value of investing, on both the material and the societal level.

Main stakeholders

- Young adults (the target group) with low financial interest. They don't know (much) about investing and don't currently practice it. People that recently started working or are about to. Those that (will) earn enough money to save some of it, but then don't know what to do with it other than depositing it in their savings account. Their current behavior is mainly saving money, and not investing. I chose this target group because of my focus on long-term vision and approach. The younger you are, the larger the impact of a design intervention. Furthermore, compound interest is the strongest when it has more time to work its magic.

Main opportunities

- What if we could teach young people to make their money work for them? What if we could help them take care of themselves in the future by using money to create more, instead of having it decrease?  
- A second opportunity is to allow them to also do good with their money, by investing in companies that are helping that are helping to solve the problems the world faces today?

Main limitations & challenges

- Competition. Banks have tried for years to convince people to start investing. A potential solution would compete with solutions from banks, and apps like BUX ZERO, Peaks, De Giro and Binck.  
- Perception. Investing is perceived as scary, risky, or even gambling. Some people see investing as a way to get rich fast, only understood by experts. They perceive it as difficult or see it as a game. A long term vision to investing needs to be taught.  
- Reputation. The companies people invest in have a negative perception. People see headlines of shareholders, pollution and negative impact of companies on the world ("I don't want to give my money to Shell"-sentiment).  
- Knowledge. People might not know anything about investing and thus perceive it as scary and complex. They need to be educated  
- Willpower. Whilst investing you inevitably face volatility, prices that are going up but also down. You need to learn perseverance to withstand these down turns and stay investing  
- Affinity. Some people simply don't like numbers / finances and are not willing to learn it.

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introduction (continued): space for images

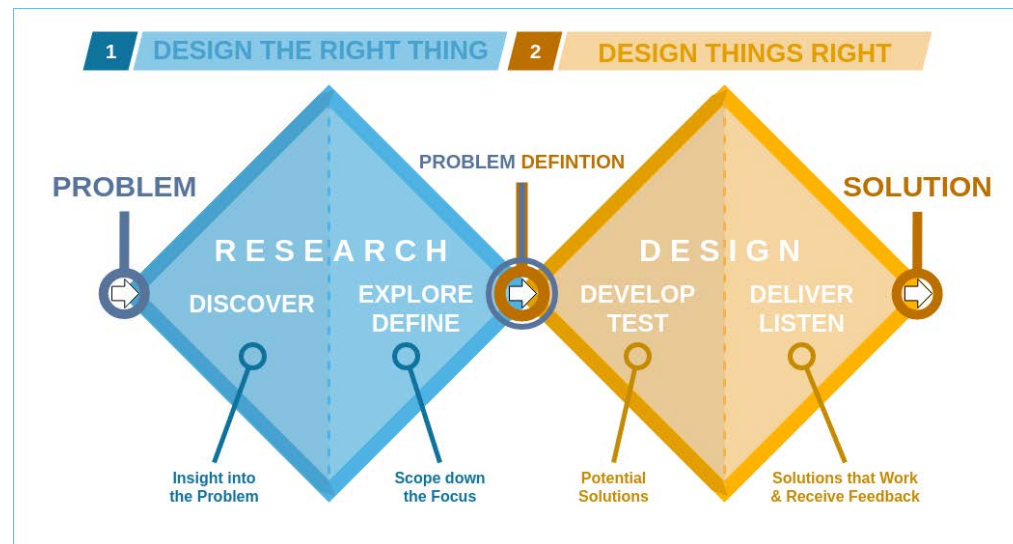


image / figure 1: Double Diamond process by the British Design Council

## EMOTIE: EEN SLECHTE RAADGEVER

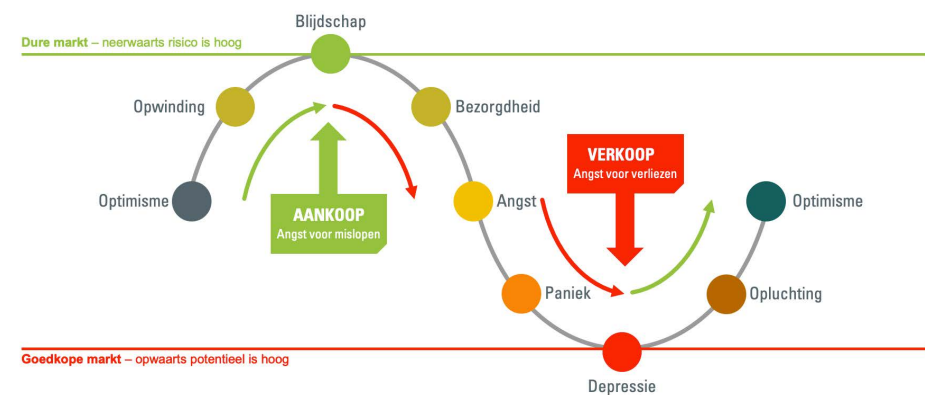


image / figure 2: Figure of the emotions during a market cycle & counter intuitive behavioral tendencies

## PROBLEM DEFINITION \*\*

Young adults are not setting themselves up for a successful financial future. They are not utilizing the power of compound interest because many of them don't invest (ignorance, fear, perception, low financial capabilities, complexity), or invest in the wrong way (gambling, speculating). This is harmful, because the longer you put off investing, the more it hurts your financial future by missing out on compounding. A savings account doesn't cut it, especially not after accounting for inflation and the possibility of receiving negative interest in the future.

There are certain psychological challenges that need to be researched and solved. Investments should be made tangible. To drive engagement with the solution over time, to keep people motivated and to give a sense of progress besides just the numbers. People need to be convinced to start investing and need to be shown the value of it.

There's also the fact that investing can be hard on your emotions, as markets tend to go up and down. As human's we're pretty hardwired to react irrationally and therefore in a way that hurts our returns. See attached graphic. This should be overcome through design. Lastly, there's the balance between short-term and long-term benefit that should be navigated.

It should be made clear to the target group what investing is about, why it can be a valuable tool for their financial future and how they can best utilize this tool.

## ASSIGNMENT \*\*

I will research the possibilities of helping people to start investing for their future, to allow them understand investing and to get to know their values. I will generate insights from research, people in the industry and most importantly the target group through surveys and interviews to find how to tackle their needs and wishes. I will then design a digital tool that aims to help people start long-term investing, understand it and invest in a way that is aligned with their values.

Broad overview - First phase of research and truth finding, followed by rapid prototyping and quick iterations based on multiple validation moments.

Initial thoughts on the research questions - What are the main concerns for the (financial) future for the target group? What is important for the target group with regards to money? What is the current opinion of the target group about investing? What is investing about? What is the best way to get started with investing? What are potential pitfalls when it comes to investing? What is compound interest? What are the other solutions that are currently out there? How do they operate and approach target group? What works, what doesn't? What investment vehicles with societal impact exist? How can you make this impact tangible and visible? What models exist regarding behavioral change? What is the best way to get people to start changing their behavior?

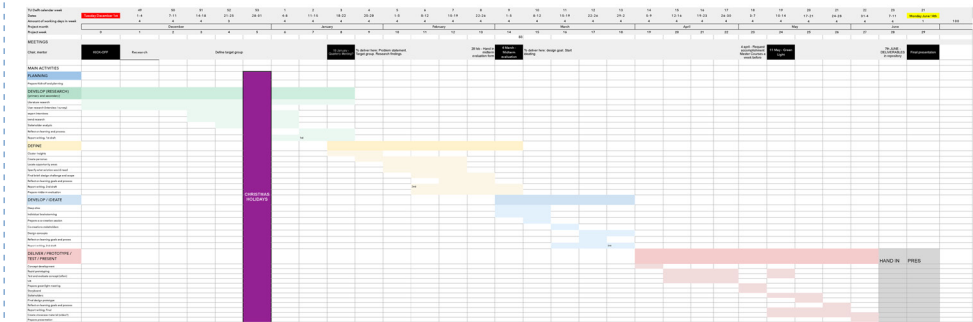
Validation - There will be validation on both on the user side (target group) as the business side (asset managers).

Digital tool - This could be an independent app, a website any other high fidelity way of communicating digitally. The first two phases, where research is done and hypothesis are being tested, will determine what way shape or form this solution gets. The strategy of how to reach the target group, the first step of the user journey, will also play an important role.

PLANNING AND APPROACH \*\*

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 3 - 12 - 2020 14 - 6 - 2020 end date



I will graduate for four working days a week, to be able to keep working next to graduating and supporting myself financially, as well as keeping the company running (together with my co-founders and colleagues).

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, .... Stick to no more than five ambitions.

Two years have passed since I, a (strategic) designer, started a business that caters to the financial sector. In these years I've had a lot of exposure to financial products and investing. Not having any schooling or knowledge on this subject, it was a strange world for me at first. Gradually I became more accustomed with this world, it's jargon and it's practices. It astounded me how little people my age knew about investing. How little they were thinking about their financial futures and actively building a better tomorrow. This is what motivated me to start this project. To come up with a solution for them. And if all goes well, I might even carry this further than the graduation and start a company or initiative to keep helping people, and the world.

- If my project were to be executed well and scaled up, I think you could:
1. Lets people build a better financial future and a better world with their savings
  2. Contributes to narrowing the wealth gap between different "classes" in the population as you help more people amass assets
  3. Give financial control and assurance to people, which is hugely relevant during the Corona Crisis and all the uncertainty that entails.

I want to further develop these skills: prototyping, UX/UI design, product & service innovation, branding and marketing. I also want to apply my current skills of visualization, storytelling and knowledge of investing. I want to do deep research, going further than any other solution out there, be attaining a more fundamental understanding of the problem. Then, I want to apply rapid prototyping and create a high fidelity, working prototype, that's user-tested (and approved!)

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.