Idea Venture Paper

Entrepreneurship for Engineers

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1. **Summary.** *Name the startup venture and describe its product(s) or service(s).*

Online Fitting Room is an innovative AI-based solution that tackles the common challenges faced by online shoppers, particularly in the fashion industry. It leverages generative AI to create a personalized virtual try-on experience, enabling customers to see how a selected piece of clothing would fit and look on them. By using a picture of the customer and a picture of the desired clothing item, this technology generates a realistic image, taking into account factors like size, fit, and style.

(Maybe adding some measure could be interesting and could improve the accurateness of the generated image or a picture of the t-shirt wear by someone)

2. Idea Generation. *How did you come up with the idea? Describe your idea generation process (e.g., frameworks or techniques used (if any), who else contributed (if anyone), how long the process took, number of idea iterations). Be specific.*

I often heard many people complaining about online shopping and more especially the fact that the clothing rarely fits as we thought it would. It is often very different from how the product fits on the model because the mannequin has a very different body than us. During my previous internship, I also had the opportunity to work with some AI generative models for images. At first, I thought it was very complicated but in the end, we managed to do some interesting things. However, to do so we need a huge amount of data and many other resources.

3. Idea Testing. *A) What have you done to get feedback from potential customers and/or industry experts, if any? (Be specific about your process here, including any or all of the following—customer interviews, landing pages, demos, prototypes, MVP tests, surveys, focus groups,*
tc.—and what you learned from them). B) For each customer interview you conducted (I would suggest minimum: three customer interviews), describe the interview (information about the person interviewed, how you found him/her, where it was conducted, how long, in person or virtual, key take-aways).

I interviewed my friends and asked them various questions about the idea. The first person I interviewed was one of my housemates, and we discussed the idea for about 10 minutes at home. I started by asking about his typical online shopping behavior, only to discover that he doesn't shop online frequently. I then inquired about the reasons for his preference and whether my new product could potentially encourage him to shop online.

It became apparent that he prefers physical shopping experiences over online ones. However, he did mention that some people he knows tend to order multiple sizes of clothing items and return the ones that don't fit. He believes that this practice could have a more significant impact on the environment than my solution, which aims to reduce such returns.

Next, I discussed the idea with my girlfriend for about 20 minutes at my house. She often enjoys shopping online because it is typically less expensive. However, she has encountered issues with sizing and how garments fit. She finds the idea quite promising but emphasizes

the need for precision to make it truly relevant. A minor mistake could significantly alter how a piece of clothing fits someone.

Finally, I talked to my sister about the idea over the phone. She engages in online shopping once or twice a year and has also experienced sizing and fitting issues with her clothing purchases. After hearing the proposition, she inquired whether a similar product already existed or if it was feasible to create. She expressed definite interest in using a tool like this if it were available.

4. **Idea Pivots.** *How did the idea change because of the testing you did, if you did any? (If possible, list the different versions of the idea to show its evolution.)*

The idea isn't fixed. The best thing would be to do a video of yourself turning to see how you would look but this seems very hard. Maybe doing it with a photo would already be very helpful for the customers who would like to try clothes online. But even with photos, it seems very complicated to do something like this. I saw some completion of images, where you hide a part and the IA generates the part hide so we could use something like this to replace for example your top with the top you would like to try. However, I only saw this type of completion with a random completion. I also thought about asking for a photo in a swimsuit or underwear. This could allow the IA to have a more accurate description of the body to then be able to put on the different clothes. However, the person should agree to do so, I am not sure everybody would be okay
with giving a photo like this even to an IA. But, all of his is mainly technical. Even if Noody has done something like this I feel confident with the few I know about generative AI that it is possible.

5. **Innovation.** *How is the venture innovative in its context? Make a case.*

There are several aspects where this venture is very innovative :

One of the key challenges in online shopping, especially for clothing, is the inability to try items before purchasing. My venture addresses this issue by providing **a personalized virtual try-on experience**. Generating an image of the customer wearing the selected clothing, allows consumers to visualize how the garment would look on them, boosting their confidence in making a purchase.

The innovation lies in the AI's capability to predict how the chosen clothing will fit the customer accurately. By analyzing the customer's body type and dimensions, the AI can simulate a realistic representation of how the outfit will look when worn, taking into account factors like size, fit, and style. This **level of personalization** is unprecedented in the e-commerce space.

High return rates are a common issue in online fashion retail, often due to items not fitting as expected. This venture can significantly **reduce these returns** by providing a more accurate representation of the product. This, in turn, reduces the environmental impact of excessive shipping and returns.

The use of generative AI to create these images can **enhance customer engagement** and satisfaction. It offers a fun and interactive shopping experience, encouraging customers to spend more time on the platform and increasing the likelihood of making a purchase.

By offering a service that bridges the gap between online shopping and in-store fitting rooms, this venture can gain a significant **competitive advantage** in the e-commerce market. Customers may be more likely to choose retailers that provide this innovative feature over those that do not.

6. Problem (or Delight). *A) What is the customer problem (or delight) it will address? B) Make a quantitative case for how bad (or big) the problem is.*

For this product, there are two possible customers: the shoppers but also the e-commerce.

For the shoppers, this product would resolve:

The problem of uncertainty in fit. When shopping for clothing online, customers often face uncertainty regarding how a garment will fit them. This can lead to frustration and dissatisfaction when the purchased item doesn't fit as expected.

The problem of high return rates. Many customers experience the inconvenience of having to return items due to size or fit issues. High return rates can be costly and time-consuming for both customers and retailers.

Customers **save time and money** by avoiding the need to return items that don't fit. They can make more informed buying decisions, leading to a more efficient and cost-effective shopping experience.

It could also create an entrainment for the person doing online shopping using this new tool.

For the e-commerce platform, this product would resolve:

The problem of **high return rates** is also a problem for the platforms, it leads to increased operational costs and customer dissatisfaction.

Customers may be hesitant to make online purchases, **fearing** that the product won't meet their **expectations**, especially in terms of fit, style, and overall appearance.

It could also make people want to do online shopping:

Customers are delighted by the opportunity to see how clothing will fit and look on them personally. This enhances their confidence and likelihood of making a purchase.

The e-commerce platform using this tool can gain a competitive edge by offering a feature that sets it apart from competitors, attracting more customers who seek a hassle-free and personalized online shopping experience.

According to Statista “43 percent of global consumers stated that their main reason for not liking to shop online was that they are not able to try out the things they like before purchasing them”. [1]

7. Market Analysis. *A) Market size (including number of customers and total spending in the category) and segmentation. B) Recent and forecasted market growth rate. C) Trends (favorable and unfavorable). D) To what extent does the idea take advantage of a trend, solve a problem, and/or address a gap in the marketplace?*

To sell this product, I thought about several approaches:

One may be the easiest B to B, selling a subscription to the different e-commerce to add your tools on their website. With this, they could attract a lot of customers.

The second is to sell a membership directly to the people. With this membership, they could use your product a certain number of times or even freely. You could also pay for each use.

The last one would be to work directly with some e-commerce platform and sell the product on their platform at the moment customers will need the most to use your product.

So, we will do a market analysis on customers and also fashion e-commerce.

If we focus on the market of Fashion e-commerce, according to Statista [2]: “In 2023, the global fashion e-commerce market is forecast to reach a value of over 820 billion U.S. Dollars". And then by 2025, that value is expected to reach $1.2 trillion.

If we look at the number of fashion e-commerce, it is more difficult to have an exact number. However, we know there are currently 9.1 million e-commerce etailers operating around the globe (according to [3] Etailinsights). There's no exact figure for how many of these online stores operate in the fashion sector. However, with clothing (51%), shoes (41%), and accessories (30%) the top three items most commonly purchased by online shoppers, according to Statista [4], fashion is undoubtedly one of the most competitive areas for online retailers.

The number of people using fashion isn't known exactly, but the number of online shoppers worldwide rises along with it. As it stands in 2023, the number of digital buyers is at 2.64 billion. The number of online shoppers has been growing over the past few years. In 2023, there are 80 million more digital buyers than there were in 2022, a 3.1% year-over-year increase. [5]

Moreover, according to 3dlook [6], customers are looking for personalization, they expect their entire experience to be personalized. This trend could push people to adopt this new product.

In Europe, clothing items had the highest fashion return rates in 2022, a study revealed. About 54 percent of dress purchases got returned, while skirts followed with roughly 47 percent. Being a popular category among online shoppers, shoewear reached significant online return rates, too. Over 45 percent of backless slipper orders were sent back in the considered year. [7]

8. Value Creation. *How much does the product or service add value to the target customers, given their circumstances, goals, and other available options?*

If we consider the target as the online shoppers:

First, it's **Reduced Uncertainty and Improved Confidence.** For customers who shop for clothing online, uncertainty about fit and style is a common concern. The AI virtual try-on addresses this problem by providing an accurate representation of how the selected clothing will look on them. This added certainty increases their confidence in making a purchase, ultimately leading to a higher conversion rate

Secondly, in terms of **Time and Effort Savings**, this product helps them a lot**.** Trying on numerous garments in physical stores can be time-consuming and tiring. The AI solution offers a convenient alternative, allowing customers to virtually try on multiple items in a matter of minutes. This time and effort savings is particularly valuable to customers with busy lifestyles.

Thirdly, it **enhances personalization.** The AI-driven try-on experience provides customers with a highly personalized shopping journey. It understands their body type and preferences, tailoring recommendations accordingly. This level of personalization is often lacking in traditional online shopping.

If we consider the target as the fashion e-commerce:

First, this product gives them a **Competitive Advantage.** Customers may prefer e-commerce platforms that offer this innovative feature over those that do not. The competitive advantage gained by the platform provides customers with more options and better service.

Secondly, the product **Reduce Return Costs.** Fashion platforms often grapple with the costs associated with high return rates. The AI virtual try-on solution can substantially reduce these costs by helping customers select items that are more likely to fit and meet their expectations. This leads to cost savings in terms of processing returns and restocking items.

Thirdly**, it enhances customer satisfaction.** The solution results in higher customer satisfaction as customers experience fewer fit-related disappointments. Satisfied customers are more likely to make repeat purchases and become loyal to the platform.

9. Founder (You). *A) How well are you positioned to launch or co-found this startup (e.g., what skills, strengths, experience, and networks do you have that are relevant)? B) (Make a case.) B) How does this venture fit with your values and aspirations?*

To create the AI virtual try-on solution, important knowledge of artificial intelligence is needed. In my courses, more than half of my subjects are concerned with this topic. The other part is courses in entrepreneurship which can be very useful to found a startup. As I already said I have already worked with some generative AI which would be very useful to understand and create the product. Concerning networks, unfortunately, it isn't very important it just represents the school I have been in, KTH, and my schools in France (Centrale Lyon and Stanislas Paris).

This venture fits my aspirations because, for a long time, I have wanted to create my product and commercialize it. Concerning my values, this product is in my mind important because it is a win for everybody the customers, and the online shop but also an environmental benefit. Indeed, this product will limit the number of return or the purchase of unfitting clothe. But also, if we think big it could also reduce the number of real shops and move due to real shopping.

10. Industry. *A) Name the industry. B) Assess the industry attractiveness. C) Which industry forces most significantly impact the industry, positively and negatively? D) How can you position your venture to be successful in its industry, given industry players and trends?*

A) The industry for the AI virtual try-on solution can be classified under "Fashion Technology".

B) The industry attractiveness for Fashion Technology is relatively high, primarily due to the different factors.

First, the E-commerce is growing. The increasing shift toward online shopping, especially in the fashion sector, provides a substantial market for innovative solutions like AI virtual try-ons.

Moreover, customers are increasingly looking for personalized, interactive, and engaging shopping experiences, that align with the offerings of Fashion Technology.

However, the industry is technology-driven and rapidly evolving, which requires staying up-to-date with the latest AI and AR developments. But you also need to convince customers to use a tech product, and platform adoption rates may vary.

C) Multiple industry forces impact the industry
The first one is the **customer preferences and adoption**. As consumers increasingly seek personalized, interactive, and convenient shopping experiences, the adoption of AI virtual try-on solutions aligns with their preferences but convincing them to use it can also be very difficult.

The **E-commerce Growth is also one.**: The rapid growth of e-commerce in the fashion industry creates a substantial market for technology-driven solutions.

Then we have the **Technological Advancements**: Positive advancements in AI, computer vision, and augmented reality technologies drive the industry forward.

However, this industry is also defined by the **high competition** within the fashion technology sector requires continuous innovation and differentiation to stand out. There is also a huge concern about **data privacy and security,** handling personal customer data and images.

D) To be successful, I have thought about several key strategies:

User-Focused Design: By prioritizing a user-friendly and visually appealing interface that encourages customers to easily engage with the virtual try-on feature, you can enhance user adoption and satisfaction, setting your venture apart in a competitive market.

Data Privacy and Security: Addressing privacy concerns by implementing robust data security measures and ensuring transparency in data usage and storage is crucial to building trust with customers and meeting evolving data protection regulations.

Integration with E-commerce Platforms: Collaborate with established e-commerce platforms to seamlessly integrate the virtual try-on feature. This approach allows customers to access the technology across multiple retailers, enhancing its accessibility and usability.

Marketing and Education: Invest in marketing and educational efforts to inform consumers about the benefits of the technology and how to use it effectively. This not only drives adoption but also positions your venture as a trusted source for fashion technology.

Continuous Innovation: Staying updated with the latest advancements in AI, AR, and fashion technology is vital to maintaining a competitive edge in the ever-evolving industry, ensuring that your solution remains cutting-edge and appealing to both customers and industry partners.

Strategic Partnerships: Collaborating with fashion brands to showcase their products using the virtual try-on creates a win-win situation. This not only expands your venture's reach but also offers fashion brands a unique way to engage with customers, making your solution an attractive proposition for both parties.

Sustainability: Leverage the reduced return rates and environmentally friendly aspects of the solution as a selling point. This aligns with the growing trend of sustainable fashion, attracting customers who are conscious of the environmental impact of their purchases.

11. Rivals. *A) Most important competitors and substitutes (name at least two of each), including similar ventures in the market or in development (if any). B) How is your venture different from or better than its top rivals?*

A) Some people have already thought about virtual dressing room solutions.
Zeekit is a company that allows customers to see how clothing will look on them using augmented reality technology.

True Fit is a company that offers a data-driven personalization platform for the fashion and retail industry. True Fit's platform uses machine learning and data analytics to help retailers and brands better understand their customers' preferences and fit-related data.

Revery AI is a company that allows customers to choose the color of the skin of the model. This helps customers overcome some of the challenges associated with online fashion shopping

There are also some substitutes.

Traditional in-person shopping at brick-and-mortar stores remains a substitute for online shopping, as customers can physically try on clothing before purchasing.

Some e-commerce platforms offer "try before you buy" programs that allow customers to order multiple sizes of an item and return what doesn't fit, replicating a traditional fitting room experience.

B) My idea is close to the one from Zeekit but differs from it in two points :

My idea primarily utilizes generative AI to create a picture of customers with the desired clothing. In contrast, Zeekit combines augmented reality (AR) and artificial intelligence (AI) to virtually try on clothing on a digital avatar. The fundamental technology and approach are different.

Zeekit creates a digital avatar that closely resembles the user's body type and size, allowing users to see how clothing looks on this avatar. My idea generates a picture using generative AI, which doesn't involve creating a digital avatar but rather overlays the chosen clothing onto an actual image of the customer. This allows the possibility of doing it with several images to have more points of view.

Compared to the two others, my idea is better because leveraging generative AI provides a more accurate and customizable virtual try-on experience.

12. Pricing. *A) Your pricing and how it compares to the pricing of your most relevant rivals. B) Evidence of customer willingness to pay.*

I could not tell any pricing of my product because I don't know the cost of all the things relative to being able to design a such solution. For Zeekit, I didn't find any price. I only know that Zeekit has raised $9M over 5 rounds. Walmart, a fashion e-commerce platform has acquired Zeekit. However, Customers can only determine the model who best represents their height, body shape, and skin tone to understand how an item will look on them [8]. Which makes me think that their solution isn't ready to be commercialized. But, it also proves that e-commerce is ready to pay for this kind of solution.

13. Financial. *A) Analyze the financial attractiveness of this opportunity. Identify important assumptions and potential gaps in the analysis. As you consider the adoption of the product in the market, factor in awareness and distribution of the product, and financial performance of*
similar ventures.

The financial attractiveness involves considering various factors:

1. **Revenue Potential**: Revenue can be generated through licensing the technology to e-commerce platforms, charging a fee for each transaction, or using a subscription-based model. The potential for generating substantial revenue is high, given the demand for enhanced online shopping experiences and reduced return rates.

2. **Cost Structure**: Costs will include initial development and ongoing maintenance of the AI technology, marketing, customer support, and data storage. Maintaining an efficient cost structure is crucial to maximizing profitability. This is the most unknown part for the moment

3. **Market Size and Growth**: The fashion e-commerce market is large and continues to grow, providing ample opportunities for revenue growth. As more customers and retailers adopt virtual try-on solutions, the market size is likely to expand further.

4. **Scalability**: The scalability of the venture is a critical factor. The ability to expand the customer base without a proportional increase in costs is essential for long-term financial success.

5. **Funding Requirements**: Consider the amount of capital required to develop, market, and scale the solution. Whether I seek funding through investors or loans will impact the financial attractiveness.

Among these factors, two are very important and closely related, but they are also the most challenging to establish at this stage. The cost structure would directly impact the funding requirements. Indeed, to develop such a tool, we will need funds to acquire, store, and process the large dataset, which is often the case when working with AI. The outcome is capital-dependent. The more capital you have, the larger your dataset can be, allowing for more extensive model training, and ultimately leading to better results.

14. Idea Screen Score: *Rate this venture and fill in the scores and total below (it is a "self-evaluation" so no "right answers" do exist. This is what you think).*

Section Score Summary Comments About the Scores

A. Idea Strength _13 (out of 20)…The more innovative the higher point. But if you suggest an idea that is just "science fiction" then give yourself a low score.
B. Industry _17 (out of 20)…Is this an industry where you think it is possible to even enter or is too much "in your way"?
C. Market _ 12(out of 20)…The more testing you have been able to do the higher point (and vice versa). Do not value "how much money" you think you can make out of it here. Estimate instead the likelihood to be able to succeed…which always tend to be about what customers feel about it. The less you know about the customers, and less tested, the lower grade.
D. Founder _ 8(out of 20)…How well prepared do you feel yourself to be in doing this for real?
E. Financial _2 (out of 20)…Do you think you could be able to fund this idea? High score if you either think you can fund it yourself (if starting very small it is often possible to do, and then gradually develop your business towards your "end goal") or you feel you have great arguments for someone else funding it (comes down to your likelihood on being able to earn a lot of money and/or your possible pitch towards someone that might have the money you need for developing this idea for real).
Overall Score _ 52 (out of 100)
(Optional): Any comments to add?

15. **Risk.** What do you think is the major risk with this venture and would you suggest to do in order to avoid it?

The primary risk lies in the possibility that the capital required to develop a robust AI virtual try-on solution may be prohibitively high. Alternatively, the cost of each execution might be excessively expensive, making it economically unviable. This situation is somewhat reminiscent of the cost associated with running ChatGPT, which exceeds $700,000 per day [9]. To achieve financial viability, a significant customer base is essential, yet the initial stages can be challenging.

While it may not be entirely avoidable, extensive research is necessary to assess the economic viability. One approach could involve creating a beta version to gauge the potential results with modest initial capital. Subsequently, estimating the expenditure required to enhance the product to a marketable level is crucial. Additionally, exploring cost-saving methods is essential to reduce overall expenses.

16. **Summary.** *Add, as some kind of summary of your idea, a Business Model Canvas for it. Either make it yourself or for instance, you can download a dummy to work on at for instance https://www.strategyzer.com/canvas/business-model-canvas*

Online Fitting Room is an innovative AI-based solution that tackles the common challenges faced by online shoppers, particularly in the fashion industry. It leverages generative AI to create a personalized virtual try-on experience, enabling customers to see how a selected piece of clothing would fit and look on them. By using a picture of the customer and a picture of the desired clothing item, this technology generates a realistic image, taking into account factors like size, fit, and style.

For shoppers, the product resolves the problem of fit uncertainty and high return rates, saving them time and money. The number of online shoppers is on the rise. The financial attractiveness of the venture is promising, given the potential for substantial revenue, cost savings through reduced returns, and an ever-expanding market. The major risk is the potentially high capital requirement to develop the product. To mitigate this risk, conducting

thorough research to assess economic viability is essential. Creating a beta version with modest initial capital, estimating the cost of enhancing the product, and exploring cost-saving methods can help make the venture economically viable.

Réference

[1] https://www.statista.com/statistics/1300945/main-reasons-not-like-online-shopping-global/#:~:text=Additionally%2C%2043%20percent%20of%20global,they%20like%20before%20purchasing%20them.

[2] https://www.statista.com/statistics/1298198/market-value-fashion-ecommerce-global/

[3] https://www.etailinsights.com/online-retailer-market-size

[4] https://www.statista.com/forecasts/997093/most-popular-categories-for-online-purchases-in-the-us

[5] https://www.oberlo.com/statistics/how-many-people-shop-online#:~:text=With%20the%20rise%20of%20ecommerce,you%20is%20an%20online%20shopper.

[6] https://3dlook.ai/content-hub/fashion-ecommerce-in-2023/

[7] https://www.statista.com/statistics/1385698/fashion-online-return-rates-by-category-europe/

[8] https://www.just-style.com/news/walmart-roll-out-zeekit-virtual-fitting-room-technology/?cf-view

[9] https://blog.medium.com/is-chatgpt-financially-viable-2d706ba84192#:~:text=%2C%20ChatGPT%20is%20quite%20expensive%20and,the%20IE%20Business%20School%20professor.

The Business Model Canvas

Designed for:	Designed by:	Date:	Version:
Online Fitting Room	Yohan Pellerin	1/11/2023	1

Key Partnerships

E-commerce Platforms: Collaborate with e-commerce partners to integrate the virtual try-on solution.

Fashion Brands: Partner with fashion brands to showcase their products through the virtual try-on feature.

Data Providers: Access body measurement and clothing data for better accuracy.

Key Activities

Technology Development: Develop and maintain the generative AI technology.

Data Collection: Gather customer images, clothing images, and measurements.

Marketing and Education: Create marketing campaigns and educational materials.

Key Resources

AI Technology: The core generative AI technology for creating virtual try-on images.
Data: A large dataset of customer images, clothing items, and measurements.
Human Expertise: AI and fashion experts for technology development and customer support.

Value Propositions

Virtual Try-On: Providing customers with an accurate virtual try-on experience to reduce uncertainty.

Cost Savings: Reducing return rates and operational costs for e-commerce platforms.

(Personalization: Offering highly personalized recommendations based on body type and style preferences.)

Customer Relationships

Self-service: Users can access the platform and use the virtual try-on independently.

Customer Support: Offering customer support for inquiries and assistance.

Channels

Online Platforms: Delivering the service through websites and mobile apps.

Marketing Campaigns: Attracting customers through online advertising and social media.

Customer Segments

Online Shoppers: Individuals who shop for clothing online and seek a better fit.

E-commerce Platforms: Fashion retailers looking to reduce return rates and enhance customer satisfaction.

Cost Structure

Technology Development: Investment in AI technology development and maintenance.

Data Acquisition: Expenses related to collecting and processing customer images and measurements.

Marketing: Costs for advertising and educational campaigns.
Customer Support: Expenses associated with providing customer assistance.

Revenue Streams

Licensing Fees: Charging e-commerce platforms a licensing fee to integrate the virtual try-on feature.

Transaction Fees: Charging a fee for each virtual try-on transaction.
Subscription Model: Offering customers a subscription-based model for unlimited or limited usage.

Collaboration Fees: Earning revenue from fashion brands for showcasing their products using the virtual try-on feature.

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