1: Ethical Business Plan

Company Name

NoteSnap Inc

Long Term Vision Statement

Goals

NoteSnap Inc is a smart notetaking app that combines the power of traditional pdfs with the capabilities of note taking apps such as OneNote, NoteSnap's notes are ordered around the main document of interest. Instead of separating your documents and notes, you combine them with notes that are integrated into the text as you would for a textbook through highlighting, adding annotating in text. NoteSnap will provide the best experience for handwriting support through writing tablets and digital pens for all platforms that preserve the good parts of handwritten notes. It goes beyond the capabilities of taking notes by paper by providing space to take notes in the same document. Additionally, NoteSnap differentiates itself by also integrating the ability to clean and transcribe manual documents that may be handwritten to a proper digital pdf format for ease of access to study and create notes. NoteSnap goes a step further as a productivity tool by integrating AI tools such as page summarization, document summarization and provides flashcard and mini quiz generation to always stay ahead in your work.

Idea Origination

This idea is the result of frustration from not having a single to go app to take good notes. Many times, there are handouts given in lectures in the form of pdfs or as papers, it is good to have physical copy but it is difficult to carry them everywhere, a way to convert them into digital formats that do not simply act as scanned copy is lacking, having a proper digital pdf enables ability to properly highlight and add comments which goes missing for scanned copies. Additionally, notetaking with writing tablet support or pen support is extremely poor across platforms, with tools such as goodnotes for Ipad have problems such as not being able to work alongside pdfs as they are too focused on simulating a paper, on the other hand annotation capabilities for pdf editors with writing tablets is awful with poor tracking support and constant glitches. This gap of a good productivity tool enabled the ideation for NoteSnap

Purpose/Values/Mission

The purpose of this app is to fill the gap and provide one for all solution for productivity to organize and learn instead of switching apps and tools. NoteSnap is dedicated to serving everyone who wants to learn to do so in the most efficient way. NoteSnap will accomplish this while providing complete control of users' content to protect their confidential documents such as unpublished research documents.

Key Questions

How should NoteSnap convince its users that this is the solution to their need?

How will NoteSnap include AI in its services, how should it be included in the product?

How many tools should be incorporated to not make the app overwhelming with its functionalities?

Strategy with Ethical Impacts AND Ethical Safeguards

OKR 1

1.C.1.1 OKR → relates to **1:ONE Objective and Key Result**

OKRS w/ Examples notes → OKR Notion link

Objective:

- By the end of the first year, NoteSnap will achieve **95% compliance with WCAG 2.1 AA accessibility standards** to ensure usability for students with visual, auditory, or motor impairments.

Key Result:

- Achieve **90%+ positive user satisfaction** among disabled students through quarterly usability studies, reduce accessibility-related complaints to fewer than 5 per 1,000 users, and partner with **at least 10 educational institutions** to ensure real-world accessibility adoption.

Stakeholder Impact:

Disabled students will gain equal access to educational tools, educational institutions will strengthen compliance with accessibility mandates, and regulatory bodies will ensure NoteSnap aligns with legal obligations, minimizing litigation risk.

1.C.1.2 OKR → relates to *2: Metric(s) with Experimentation.*

To measure the success of NoteSnap's accessibility-focused OKR, we will conduct detailed experiments using three key metrics: Accessibility Compliance Score, Disabled User Satisfaction Rate, and Accessibility Complaint Rate.

The Accessibility Compliance Score will be measured through automated scans and expert audits conducted every month. These assessments will verify adherence to WCAG 2.1 AA standards by testing features like screen reader compatibility, keyboard navigation, and contrast settings. The success threshold is achieving at least **90% compliance across all product features**.

Disabled User Satisfaction Rate will be assessed through usability studies conducted quarterly. Fifty disabled students will participate in structured testing, performing essential tasks like scanning notes, navigating the platform with assistive technology, and generating study aids. After each session, participants will complete a survey that includes the following questions:

- On a scale of 1-10, how easy was it to use NoteSnap for studying?

- Did NoteSnap's accessibility features meet your needs? (Yes/No)

- What challenges, if any, did you encounter while using NoteSnap?

The goal is to have **at least 85% of respondents rate their experience at 8 or higher**.

The Accessibility Complaint Rate will be measured by tracking the number of accessibility-related support tickets per thousand monthly active users. The experiment involves analyzing complaint trends over six months to identify recurring issues. If the complaint rate exceeds five per thousand users, targeted usability enhancements will be prioritized in the next development cycle. Additionally, A/B testing will be conducted to compare user retention and satisfaction between a baseline interface and an enhanced high-contrast, screen-reader optimized version. These tests will help determine the impact of accessibility improvements on overall engagement.

1.C.1.2 OKR → relates to *3: Ethical Impact(s)/Issue(s).*

3: Ethical Impact(s)/Issue(s)

Ensuring accessibility for disabled students is both a legal and moral imperative. If NoteSnap fails to deliver a fully accessible experience, students with disabilities risk being excluded from essential educational resources—thereby deepening the digital divide. This concern extends not only to individual users but also to educational institutions that rely on NoteSnap to comply with disability laws.

A key ethical issue involves algorithmic bias in AI-driven note summarization. The technology might struggle to accurately interpret handwritten diagrams, specialized notation, or non-standard handwriting styles, which can disproportionately impact students with cognitive or motor impairments.

A real-world example highlighting the consequences of insufficient digital oversight is Attorney General v. Facebook, Inc., No. SJC-12946 (2021).[1] In this case, the Massachusetts Attorney General investigated Facebook following the Cambridge Analytica scandal and demanded detailed information on how the company monitored and protected user data. The case underscored a broader ideal: digital platforms must proactively safeguard user rights and ensure equitable treatment. If NoteSnap does not address its accessibility gaps, it may face analogous legal and reputational risks.

Another ethical challenge is financial accessibility. While NoteSnap's free version offers basic functionality, its more advanced AI-powered summarization tools are locked behind a paywall. This pricing model raises equity concerns, as students from lower-income backgrounds might not have access to premium features. Similarly, educational institutions could encounter conflicts: they are legally obligated to provide accessible tools but may struggle with budget constraints to offer premium services to all students.

Below is a table summarizing possible ethical risks for each stakeholder.

Stakeholder	Financial Risk	Privacy Risk	Conflicting Interest Risk	Violation of Rights Risk
Disabled Students	Low	Low	Mid	High
Educational Institutions	Low	Low	Mid	Mid
NoteSnap Inc.	Mid	Low	Low	Low

Disabled Students

- **Financial Risk:** Low – NoteSnap offers a free version, so basic access is available.

- **Violation of Rights Risk:** High – If NoteSnap fails to ensure accessibility, students could be excluded from essential academic tools.

- **Conflicting Interest Risk:** Moderate – Students might resort to third-party accessibility tools, which can introduce privacy risks and inconsistent learning experiences.

Educational Institutions

- **Financial Risk:** Low – Institutions are not directly responsible for NoteSnap's subscription costs.

- **Violation of Rights Risk:** Moderate – Mandating the use of NoteSnap without full accessibility may result in rights violations, similar to concerns highlighted in *Attorney General v. Facebook, Inc.*, No. SJC-12946 (2021). [1]

- **Conflicting Interest Risk:** Moderate – Institutions must balance legal compliance for accessibility with budget constraints.

NoteSnap Inc.

- **Financial Risk:** Moderate – Investing in accessibility solutions requires additional expenditure.

- **Violation of Rights Risk:** High – Failing to meet accessibility standards could lead to lawsuits and significant reputational damage.

- **Conflicting Interest Risk:** Low – Although profitability is important, maintaining ethical responsibility is essential to avoid long-term legal risks.

1.C.1.4 OKR → relates to **4: Ethical Safeguards.**

To mitigate these ethical concerns, NoteSnap will implement a multi-layered approach focused on accessibility compliance, algorithmic fairness, and financial inclusivity.

Safeguard 1: Accessibility Compliance Audits

NoteSnap will partner with **accessibility experts** from organizations such as the Web Accessibility Initiative (WAI) to conduct periodic **compliance audits**. These audits will verify WCAG 2.1 AA adherence and ensure all features, including AI-generated content, meet accessibility standards. We will also involve disabled users in **real-world usability testing** to validate accessibility beyond theoretical compliance.

Implementation:

- Conduct **quarterly audits** with external accessibility consultants.

- Establish a **user feedback loop** to track and address accessibility issues.

- Require **pre-release accessibility validation** before any update is deployed.

Measuring Effectiveness:

- A compliance score **above 95%** on all audits.

- **Decreasing** accessibility-related complaints over time.

- **Increased usability ratings** from disabled users.

Safeguard 2: AI Bias Detection and Correction

To prevent algorithmic bias, NoteSnap will develop **diverse AI training datasets** incorporating various handwriting styles, learning disabilities, and linguistic variations. Ethical AI experts and data scientists will review AI outputs to ensure equitable processing of content.

Implementation:

- Require **balanced training datasets** representing diverse users.

- Implement **AI audit tools** to detect and correct bias.

- Establish a **Bias Review Board** to oversee AI fairness.

Measuring Effectiveness:

- **Reduced error rates** for disabled users when using AI-generated features.

- Continuous **AI performance tracking** with quarterly adjustments.

- User feedback showing **minimal disparities** across demographics.

Safeguard 3: Financial Accessibility Initiatives

To address financial barriers, NoteSnap will provide **discounted or free premium access** for students in low-income institutions, subsidized through **educational grants** and partnerships with universities.

Implementation:

- Work with **universities** to offer institutional subscriptions.

- Apply for **federal and private grants** supporting accessibility technology.

- Establish a **scholarship-based access program** for students in need.

Measuring Effectiveness:

- **Increased premium adoption** among low-income students.

- **Sustained partnerships** with at least 10 universities.

- **Positive financial impact reports** from grant funding.

OKR 2

Objective: NoteSnap will expand its userbase and gain loyal users for feedback to further improve the software.

Key Result 1: By the end of year 1, NoteSnap will have 5,000 active users.

OR

Key Result 2: By the end of 6 months, NoteSnap will have a 30-day post-install 50% retention rate.

The software will be designed primarily for students, but in the future could also be expanded for users studying certifications, job interviews, or language enthusiasts. It would be designed for mobile first since that is the primary form of technology available to the majority of students, but also include desktop/web for more involved study sessions. The software would accomodate student's learning needs wherever they are in their academic journey ie.If the student has not been introduced to tested note-taking methods, then it would start there in order to provide the user and AI with sufficient material to generate study activities and promote positive note-taking habits.

Key stakeholders involved would be the students/clients and the company providing the software/storage. The students providing their notes for materials would be informed by the company that their notes are being utilized for the purpose of providing them study activities, but the notes themselves are still owned by the students and the company only owns the results of the AI analyzation and the resulting study material. The original notes would stay stored on the user's device while the AI analyzed results would be stored on the company's servers and made use of in order to enhance other user's experience/collect feedback. Other possible involved stakeholders could be the instructors or even the institutions providing the instruction. The instructors may be affected if a student misuses the software by using it directly on the instructor's lectures or just copies them verbatim and uses it afterwards. The instutitions may be affected if they feel like the software is taking the role of the instructor or that the instructor's material is being stolen/plagiarized, however the software does not construct study materials from nothing and will have a warning to not be used on raw lecture material. **It should be emphasized that this software is to be used as a tool for studying rather than a replacement for the process.**

2: Metric(s) with Experimentation.

Expand NoteSnap's userbase and gain loyal users for feedback to further improve the software.

Key Result: NoteSnap will achieve an "active" usercount of 5,000 people. "Active" meaning users who regularly log in and make use of the software, ie. Returning users who use the study function in the last 2-weeks, users generating new note pages in the last week

Measurement Experiment Procedure:

1. Setting up analytics tracking user logins, interactions per login, and times between logins prior to a deadline ie. how many times on average they re-use the study feature per login, how often they return to reinforce their knowledge, testing whether more frequent reminders prior to a deadline or a steadied amount gets more engagement

a. Implementing various periods of reminder notifications/emails and analyzing which method/times get the most interactions depending on difficulty level.. ie. Notifications every 2 days, 3 days, or 4 days on hardest; 4 days, 5 days, 7 days on medium, 5 days, 7 days, or 9 for easiest difficulty.

i.Prompt users to set a dead-line/test date and increasing prompts/reminders to use the app as the date approaches in order to increase their retention of material and collect feedback on whether the increased intensity assisted with their test results.

1. Options: Sad Face 1, Kinda Sad Face 2, Medium Face 3, Kinda Happy Face 4, Happy Face 5

a. On a scale of 1 - 5, how useful was NoteSnap in helping you remember material for the test?

i.If 1 - 3 selected, prompt for clarification on why it was not as helpful ie. overwhelming notification intensity, activities not engaging, topic is boring, suggestions not relevant

ii.If 4 - 5, prompt for clarification on which features felt impactful in remembering ie. activity variety engaging, notifications reinforced behavior, suggestions for topic relevant/interesting

b. On a scale of 1 - 5, did it feel like the amount of reminders you received were proportional to your chosen difficulty?

c. On a scale of 1 - 5, how relevant were the study questions to the actual test material?

i.Based on this feedback and the collected metrics, adjusting the suggestion/activity difficulty level can help in personalizing the software for the user ie. If the subject is math at a high school level, adjusting activities to that level may assist their understanding more.

2. Rating user's provided notes in terms of accuracy and comprehensibility of the subject.

a. Gather user metrics such as age and gender on account creation in order to suggest appropriate notes/gather data relevant to AI analysis of notes. ie. Male users may remember notes better if formatted differently from female users, so having gender oriented suggestions may assist users in better note-taking/study practices/memory retention or older users may be more experienced with the subjects while younger users may be more concerned with expending the least amount of effort if the material is not engaging.

i.On account creation, prompt for user's consent for gender, age, and active education level. They are not required to provide this information and it should be framed as a "complete profile" activity in order to assist in software improvement.

3: Ethical Impact(s)/Issue(s).

A possible ethical impact could involve could involve copyright infringement of the user's notes which the AI uses to construct study materials, or supplements with additional information the user may have missed or needs in their notes, based on publically available information about the subject and other users results of analyzed notes about similar subjects. This is similar to the [3] Andersen v. Stability AI Ltd. case , in which the defendant, Stability AI Ltd., argued that "...the models do not copy or store any images [...] only analyzed the properties of online images to generate parameters that were later used to assist the model in creating new and unique images." Our software does not create notes, but may make suggestions on users existing notes based on publically available data about the subject that they may add themselves. Users who may continue to use the software may form a bias depending on whether the study materials/suggestions generated by the AI accurately reflected what was on the testing material they first downloaded the software for. The study materials also vary depending on the user provided notes, so the users who stay may already be well-versed in note-taking or more invested in the material. The AI may form a bias based on collected metrics such as gender or age that must be accounted for and corrected in analysis.

Ethical Impact Risk Table

Stakeholder	Financial Risk	Copyright Risk	Conflicting Interest Risk
User	low	high	mid
Company	high	low	mid
Instructor	low	medium	low

User Stakeholder: The financial risk for users is low due to the user not being directly invested in large amounts of money related to this software, only paying a subscription fee for more

advanced features. For copyright risk, there is a high risk that user's copyright of their provided notes may be infringed upon due to the software deriving its service from that provided material. For the user, the conflict of interest is moderate. Users desire something that provides the most assistance with learning for the least amount of effort while companies may prioritize engagement and low churn rate.

Company Stakeholder: The financial risk for companies is high since they will provide the infrastructure and support for the software, such as storing the data providing the processing power for the AI to function. Copyright risk for the company is low since none of their data or materials are being used for the AI function. For the company, conflict of interest is moderate since their prioritization will be engagement and number of active subscribers for the software, they may de-prioritize free users who are not committed financially with the product.

Instructor Stakeholder: The financial risk for instructors is low since their financial stability is not affected by this software, and may even be cemented if their lectures are concise, relevant to the tests they administer, and the student takes diligent notes of their lectures. The copyright risk is moderate since students may misuse the software and use it directly on instructor-provided material rather than taking their own notes on it. For the instructor, conflict of interest is low since their goal of instructing the student is in-line with the software goal of improving their understanding and memory retention.

4: Ethical Safeguards.

[1] One method of avoiding copyright infringement or invoking Fair Use of provided material would be having the user accept a prompt before scanning their notes that by doing so, they are giving the software and the company permission to use the results of the scanned document for AI training and that no copies of their notes are kept on the company's databases, their notes are still their own property that they own the rights of. Perhaps having these clauses in the Terms of Service as well would assist in handling legal responsibility. An AI software ethics expert can be consulted for this. As for the AI data collection practice, [2] providing full user transparency on how the AI collects its data will be critical in gaining user trust. For the subject of biased data collected, accounting for that bias in the AI is paramount to collecting usable data. We would have to consult with an AI training expert/scientist Setting up age brackets for K-12 aged students, college students, and higher aged users while having a minimum number of users per

bracket collected to make the data valid. For this, we can consult a data science expert on how to account for the uneven distribution of data collected

OKR 3

By the end of year 1, we will aim to achieve 75% conversion rate of 30% of current userbase after 6 months who only use the app for scanning pdfs and transition them into active Note users who utilize the main feature sets of the app including annotation and mini note capabilities around pdfs. NoteSnap's main selling point is around its superior note taking capabilities that combine capabilities of a traditional pdf reader and brings ease of notetaking access similar to apps such as OneNote and combines them to manage notes around mini notes and annotations around documents. The main objective is to bring the stakeholders who use the app for one of its free offerings of scanning and transcribing to a paid user who utilizes note capabilities. Furthermore NoteSnap must position itself as a superior digital pen notetaking app to achieve this. Key stakeholders for this feature are students, teachers and researchers. Students often receive physical handouts during their lectures. A part of this student userbase utilizes NoteSnap to only scan, transcribe and convert them into pdfs, the aim is to encourage this base of customers to join in NoteSnap's way of managing notes. Students who are inclined to switch are people who like to see all their notes organized in one place, students in literature classes take special interest in this app due to its annotation capabilities, which is very important to them. Teachers often receive test papers to grade in person, there is a base of these stakeholders that only utilize our app to scan and convert to pdfs, for them, educating them on the ease of doing their work through our app is important. This group would be interested in being able to make comments, grades and add their personal comments that are private to them while grading papers. Final base of stakeholders identified are researchers. They convert their mind maps, charts and documents to transcribed pdfs, the aim with this stakeholder is to convince them to stay within the app to continue their research and utilize our features. Researchers are generally interested in being able to organize their references, sources and notes together which is something that NoteSnap excels in. All the stakeholders share a common relationship of academics, this app fits nicely with any academic oriented professional.

The main objective of this OKR is to convince users who use this tool to go beyond NoteSnap's scanning and transcribing pdfs to adopt notetaking with annotation and mini notes capability using digital pens. To achieve this, the following experiments will be conducted:

The first experiment will run with the null hypothesis: "NoteSnap users who utilize annotation and handwritten notetaking abilities are overwhelmed by the options and navigating through tools provided"

To disprove this hypothesis, surveys need to be designed that can help collect data to prove that users are not overwhelmed by NoteSnap's feature set.

The metrics used for this would be "average happiness score from customers measured by survey mid user session"

The following questions will be answered:

1. "On a scale of 1-10 how easy is it to pick highlight tool", along with a slider after the user uses highlight feature a few times.
2. On a scale of 1-10, how would you rate NoteSnap

The null hypothesis is rejected if the average score across both of these questions rank above a 7

Another statistic that is used is to judge which feature most entices the customer to try out NoteSnap's complete feature set, to achieve this:

1. Track user analytics of most used tools by setting up user logins and interactions with different tools in the app

These statistics could then help to create pop ups that push users to try feature set and eventually adopt them. To sum up, in an ideal case, user analytics collected would give insights to push pop ups and happiness ratings help judge how likely someone chooses to stay on the app.

The questions will be asked through mini pop ups and not through volunteering options, this is to reduce bias which could be introduced by users who are either too happy or too frustrated with the application that choose to volunteer for a survey.

3: Ethical Impact(s)/Issue(s)

Expected Ethical Impact Risk Table

Stakeholder	Financial Risk	Privacy Risk	Conflicting interest Risk
Students	Low	Medium	Low
Teachers	Medium	Medium	Low
Researchers	Low	High	Low

Analysis of Ethical Impact Risk:

- Students: The financial risk for a student is low when collecting feature usage data as there's no correlation of using app data with their current monetary means. Privacy risk for collecting user data to measure the usefulness of a tool is moderate. Students may feel uneasy that their actions are being recorded, the primary concern is privacy invasion. NoteSnap must collect data but not identify any behaviors to an individual. There is low conflict of interest as the only problem could be to identify the app with annoying notifications rather than a productivity app.
- Teachers: Financial risk is low for surveys conducted through surveys and pop ups, there is little to no risk to their income. Privacy risk is moderate, as discussed, the main cause of concern would be Privacy risk. Finally, there is low conflict of interest, questions asked through pop ups might create negative perception around its productivity app image.
- Researchers: The financial risk for a researcher is low for usage data collected through pop up surveys and tool usage as there is no correlation with their work and the data collected. Privacy risk is moderate as they might be uncomfortable knowing that their tool usage is recorded especially in cases of researching on confidential information. However, since the actual contents are not recorded, this can be classified as a moderate risk. Conflict of interest risk is low, the same risk of negative perception around its productivity app image applies here as well.

One primary concern across all the stakeholders is with usage collection and possible cases where there is a risk of running into Informed Consent where a user might not understand the collected statistics that they signed up for. This could be caused if usage data collected is not notified properly, as seen in case of Sears Holdings Management Corporation [1]

Another ethical issue among all stakeholders is regarding Data Retention ethics, user analytics collected might be given or used by a third party to process and get results, which is especially common in smaller businesses that lack managing power, this could create a similar problem to Lane V Facebook where users where forced into data sharing agreements without explicit consent [2]

4. Ethical Safeguards

One safeguard to help ensure all users are informed on what they are signing up for is to create a better UI interface that highlights all the data collected and makes it easier to be transparent, this is given as one of the recommendations by General Data Protection Regulation in the EU but can be extended to users across the globe [3]. This can be achieved through hiring talent that excels in user friendly design and an accessibility engineer that can recommend and judge if a certain way of informing about data regulation policies achieves required levels of understanding on

users end. To measure its effectiveness, the time spent of the data notification page can be used, an experiment can be conducted where participants go through different data collection policy pages, participants who spend more time on the data collection page instead of blindly clicking on "Accept All" will mean they are willing to read it and captured by the UI's friendliness.

Another safeguard to protect against possible violation of Data Retention is to give users an option to auto delete data if they choose to after a certain period of time, a similar strategy is adopted by Google where users can adopt to delete location data automatically after a certain period of time [4]. To achieve this, an additional feature can be implemented in the toolbar under "Help" with an option to choose to delete data after a certain period of time, this can help protect against storing data for longer periods of time and making user data vulnerable to outside attacks as well. Its effectiveness can be measured by running a test run and checking how often users go looking for ways to delete data and search our website for ways to delete data. Surveys on educating users and asking their opinion from volunteering users can also give insight on the effectiveness of this strategy.