

# Capstone Project Phase 1 - Nexas

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## 1 Members

Name	Role(s)
Nayaab Azim	UI Design Liaison
Mark Carroll	App Development Lead
Inseong Lee	Server and Functionality Manager
Jackson Livanec	Project Manager and Database Wizard
Yulong Zhong	Functionality, Feature, and Front-end Fiend

## 2 Assumptions and Risks

This project assumes the team will have access to necessary libraries necessary for full functionality. This includes libraries for:

- Avatars
- Password management/ hashing
- Database integration
- Transcription
- Word similarity (Search Algorithm)

There are a number of minor risks involved with the creation and deployment of this project. There are logistical challenges such as poor communication, unequal coding abilities within the group, and time commitment. Technical risks include lack of access to necessary platforms, software, and libraries. Financial risks include costs associated with these necessary technologies.

## 3 Description/ Background

Nexas aims to create a messaging platform that maximizes UX by prioritizing simplicity and privacy. It introduces features such as a streamlined user interface and the option for users to engage anonymously through avatars. Unlike traditional messaging apps, it focuses solely on video communication, automatically generating transcripts for convenience. Additionally, the platform innovates by outsourcing user discovery to backend algorithms, removing the need for users to actively seek connections, making it easier to build communities organically.

### 3.1 Product Need

The following studies provide foundational insights and context for our project:

**What Video Can and Can't Do for Collaboration: A Case Study [3]**

This paper presents a detailed comparison between a small team's interactions via video chat versus their in-person interactions. The study highlights both the strengths and limitations of video as a communication tool. It provides a foundational understanding of the role of video in asynchronous communication, highlighting its necessity in remote collaboration.

**Video Sharing in Online Social Networks: Measurement and Analysis [5]**

This research investigates video sharing on the Chinese social platform RenRen, offering valuable insights into how video content is used in online communities. It informs our approach to video sharing by demonstrating how shared content enhances engagement and interaction within social networks.

**Meeting with Media: Comparing Synchronous Media Sharing and Icebreaker Questions in Initial Interactions via Video Chat [7]**

This study explores shared media as an alternative to synchronous video sharing in initial interactions during video chats. It supports the idea of integrating shared media to foster engagement and ease tension during icebreaking activities in our platform.

**Design and Evaluation of a Multi-Player Mobile Game for Ice-breaking Activity [4]**

This paper details the design of a multiplayer mobile game aimed at facilitating social interactions through icebreaking activities. Its insights into social applications and user behavior are directly relevant to creating environments that foster social connections in our platform.

**InTouch Tactile Tales: Haptic Feedback and Long-Distance Storytelling [6]**

This study explores the use of haptic feedback in long-distance storytelling through a pebble-like device. It provides an interesting angle on enhancing emotional connection through tactile feedback, which could inspire future additions to our platform, especially for elder care applications.

**Video Threads: Asynchronous Video Sharing for Temporally Distributed Teams [1]**

This paper introduces the concept of "video threads," an asynchronous video sharing application designed for distributed teams. Though outdated, the core principles align with our project's focus on asynchronous video sharing, particularly for structuring threaded video conversations.

**Engaging Teenagers in Asynchronous Groups for Stress Management [2]**

This study examined teenagers' engagement in asynchronous online groups designed for stress management. Its findings highlight the importance of flexibility and limited interaction in asynchronous communication, providing

insights into how we can approach similar scenarios for adult users.

### 3.2 Current Market

Similar apps that we have compared to our app:

**Snapchat:** Snapchat’s disappearing message appeals to users concerned about privacy. However, this feature could be inconvenient for those seeking meaningful and lasting conversations. Additionally, its interface is relatively complex, especially for new users or older people who may not be familiar with such systems. The app also focuses on connections between people who already know each other, providing limited opportunities to discover new users or communities outside existing networks.

**Wechat:** WeChat raises privacy concerns due to its compliance with Chinese regulations, potentially requiring data sharing with the government. Its extensive features, like WeChat Pay, are limited outside of China, reducing its functionality internationally. The app also faces criticism for heavy censorship, impacting free speech. Additionally, WeChat’s broad range of services makes it resource-intensive, consuming more data and battery power than many other apps.

**Marco Polo:** Marco Polo’s contact-based discovery restricts interactions to users’ existing contacts, limiting social discovery. While video messaging is its core feature, it may not appeal to those who prefer text or multimedia-rich communication. Additionally, Marco Polo lacks the immersive features of apps like Snapchat or Instagram, offering a simpler, less engaging experience for users seeking dynamic interactions.

**Omegle:** Omegle’s focus on anonymity often leads to situations where inappropriate content, cyberbullying, or other harmful interactions occur. Due to the lack of moderation and the nature of live video sharing, it is harder to monitor and control inappropriate behavior. Another downside of Omegle is that its random matching algorithm prevents users from forming meaningful and lasting relationships.

### 3.3 Competitive Analysis

This app will be competitive in the messaging app market for the following unique features:

**Ease of use:** The platform will prioritize a simple, intuitive interface. Complex user interfaces can be a significant barrier to user adoption, particularly for those who older or disabled population. The design will focus on minimizing the learning curve, allowing users to start using the app without extensive

instructions.

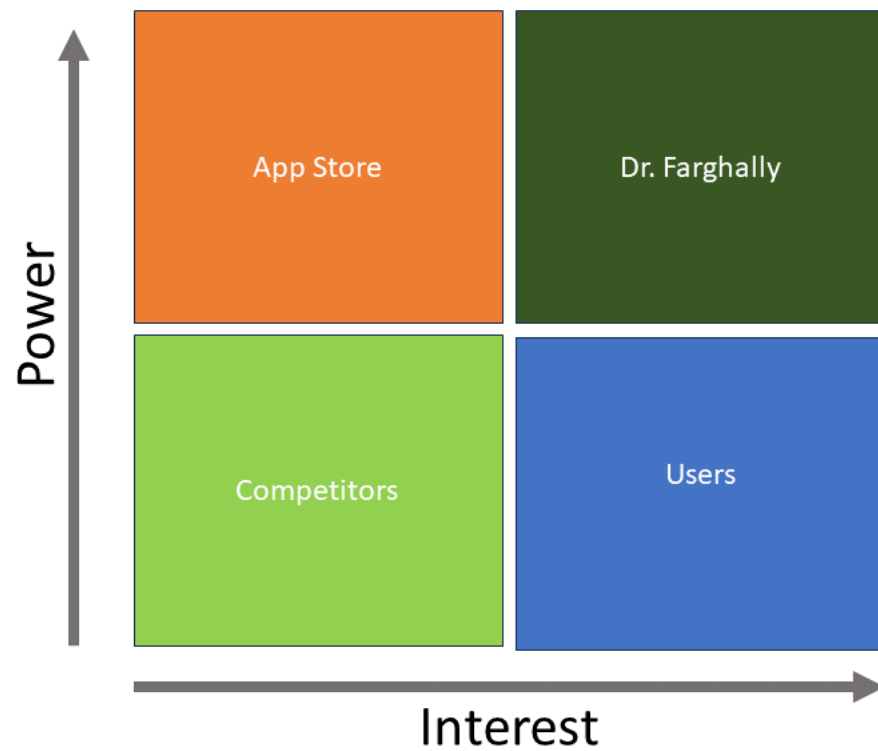
**Optional Anonymity:** Users will have the choice to remain anonymous by using an avatar rather than revealing their face. This is geared towards user privacy and comfort.

**Video Messaging:** Unlike typical messaging apps that focus on text, this platform will be video-centric. Transcripts will be automatically generated, making it easy for users to review conversations in text form if needed.

**Interest-Based Discovery:** A unique aspect of the platform is that users won't need to manually search for or connect with other users to form chat groups. Instead, the app will automatically create groups on the backend. This will leverage algorithms to connect individuals with similar interests or needs, making it easier for people to find communities and conversations that matter to them.

## 4 Stakeholder Analysis

Name	Position	Contact Information	Business Needs	Influence	Classification
Dr. Farghally	Professor	mfseddik@vt.edu	Operation	Evaluation	Supporter
Users	Any	Any	Operation	Design	Neutral
App Stores	Platform	Apple, Android	Functionality	Restrictions, Requirements	Resistor
Competitors	All	All	Market Share	Market Share	Resistor



## 5 Team Logistics

### 5.1 Timeline

Time	Milestone
September 13	Project Overview
September 27	Front and backend mock-ups
October 4	Technology Framework
November 1	Iteration 1 prototype
November 15	Iteration 2
November 29	Final Iteration

### 5.2 Communication

Communication will occur primarily through discord. Meetings will be held twice weekly at the following times:

- In-person Thursday at 6:30pm
- Via discord Friday at 3:00pm

### 5.3 Team Dynamics

#### Skills we have:

- Frontend design
- Android and iOS app development
- Database management
- Full stack development
- Machine Learning
- Time management
- Project management
- Agile coding

#### Missing Skills:

- Server development
- Social media development
- Hardware optimization

#### Method of acquiring skills:

- Online resources
- Free Training
- Consultation with industry experts

## References

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