Hula

Improving well-being through multigenerational family connection

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Human-Computer Interaction Institute

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Nationwide

This is the year 2020.

In exactly a decade from now, 1 in every 5 U.S. residents will be of retirement age. For the first time in history, there will be more people over the age of 65 than children under the age of 18. An expanding population drives an expanding market, and new opportunities will arise as more and more aging adults demand a healthy, independent, and fulfilling retirement.

We went miles deep into this space, talking heart-to-heart with aging adults about all walks of life including their worst troubles and greatest hopes. Then, inspired by the voices we heard, we designed a solution to solve problems in retirement that are physical and emotional, for aging adults and their family members.

In this report, we present a family communication platform, Hula, that connects aging adults and their loved ones. We will guide you through major challenges we uncovered around aging in place and delve into essential components of our solution to demonstrate how it provides value for Nationwide's existing and potential customers.
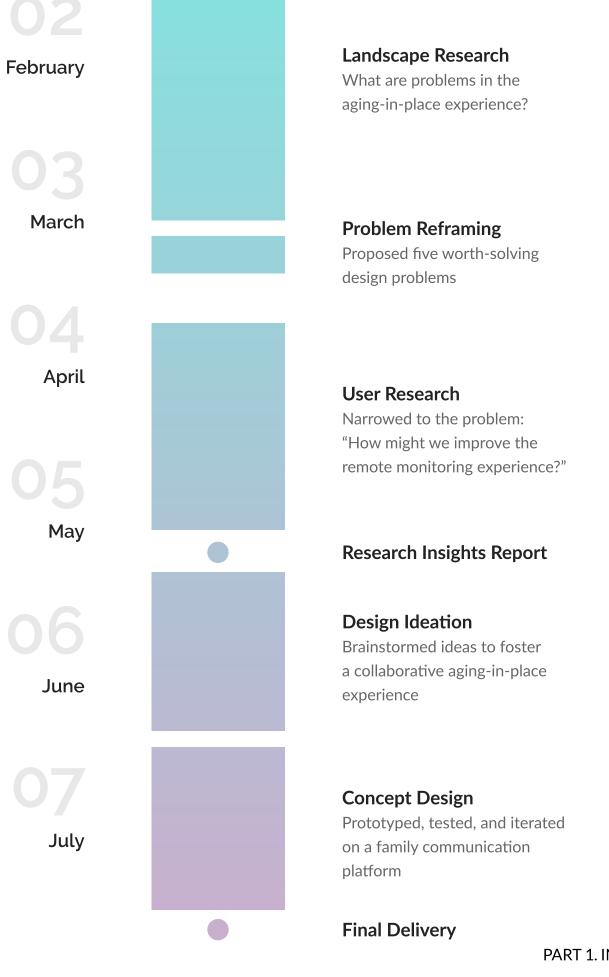
Table Of Content

PART 1
Intro

Project Brief

Over the course of 8 months, our team of five Master of Human-Computer Interaction students worked alongside Nationwide Innovation and Nationwide Ventures to improve aging adults' life in retirement. Through this process, our team helped Nationwide identify worth-solving pain points and brainstormed opportunities in the aging in place experience.

Among other interesting problems we identified, we saw a particular opportunity to study the abilities and limitations of an adult child taking care of a parent remotely, with and without the use of monitoring products. We wanted to understand why remote monitoring solutions are under-adopted, and what broader needs might yet be addressed.

Through extensive research with 140 aging adults and their loved ones, we came to the determination that successful aging in place and caregiving is impossible without active collaboration and communication between aging adults and their loved ones. So we asked ourselves:

How might we forge a partnership between two people who love each other — aging adults and their adult children — to build a collaborative aging-in-place experience?

Based on this question, we designed a family communication platform that allows aging adults to proactively connect with family members of all generations and enables adult children to unobtrusively monitor the health and safety of their aging parents through short videos.

02
February

Landscape Research
What are problems in the aging-in-place experience?

03
March

Problem Reframing
Proposed five worth-solving design problems

04
April

User Research
Narrowed to the problem: "How might we improve the remote monitoring experience?"

05
May

Research Insights Report

06
June

Design Ideation
Brainstormed ideas to foster a collaborative aging-in-place experience

07
July

Concept Design
Prototyped, tested, and iterated on a family communication platform

Final Delivery

Our Product — ⭕ Hula

We're better when we're together. Just because our family lives apart doesn't mean we have to miss out! Make new memories and look out for your loved ones like you're right there with Hula, designed specifically for multigenerational connection.

Family-Friendly Challenges

No more coordinating schedules for lengthy video calls to keep in touch! Launch a new "Hula" to challenge family members on the app to complete their own short video. Choose from Hula's bank of fun challenges, like sharing a family story or showing off what you're cooking that day. Sharing Hula videos is easy, done on your schedule, and lets your family see a snapshot of your day.
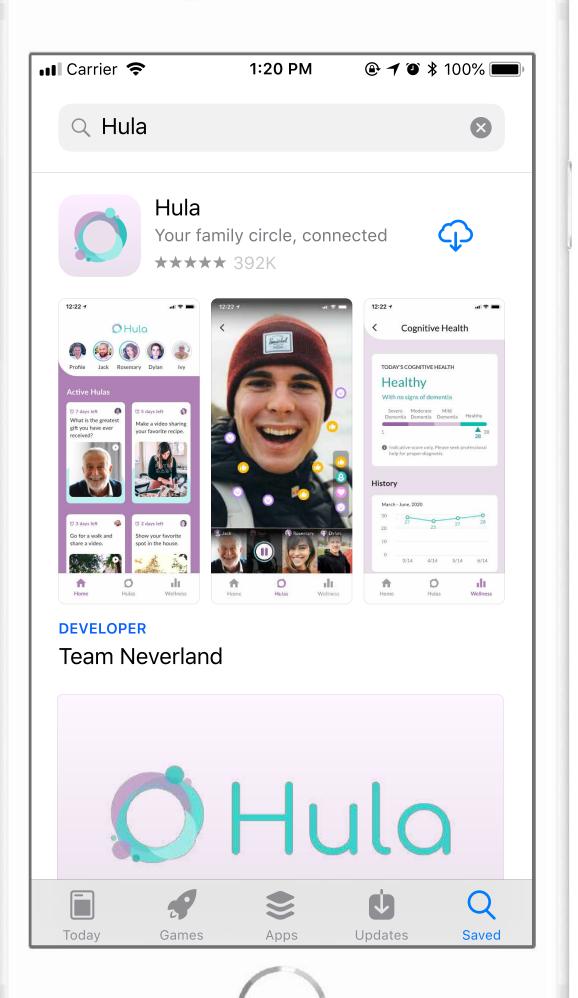
Wellness Watch

We know families worry, especially when they're not there. When enabled, Hula's wellness feature leverages clinically-proven technology to analyze your videos for markers of mood, physical pain, cognitive health, tremor, and lung health. Our program picks up on facial and vocal indicators undetectable to humans, which tracked over time may help detect larger issues like high blood pressure, dementia, or congestive heart failure.

Privacy-First Data Sharing

Health can be hard to talk about, but we know it's more important than ever to keep an eye on your loved ones. You are in control over who sees your wellness data, and may approve family members' requests to view yours. Hula anonymizes user data, so no one but you and your family will see it.

Hula is your family circle, connected. Get closer and grow together with those who matter most!

Our Team

PROJECT MANAGER

Diana Zhan Shum

Diana is an experienced UX designer with a background in Cognitive Science. She's passionate about applying a human-centered approach to the design process. Leveraging her years of work experience in the industry, she led the team by ensuring the project incorporated iterative research and design initiatives that were informed by user feedback.

RESEARCH LEAD

Amrita Sakhrani

Amrita is a UX designer with a background in Economics. She has previously worked in E-commerce customer experience. As a research lead on the team, she led the research recruitment effort, usability testing and developed research plans.

RESEARCH LEAD

Marc Dubin

Marc is an experienced UX researcher with a background in Computer Science and Psychology. He loves understanding how and why people interact with a product or service and making that experience efficient and enjoyable. As a research lead on the team, he designed the research sprints and led the research synthesis and insight generation.

DESIGN LEAD

Missy Chen

Missy is a UX designer with a background in visual design and multimedia storytelling. She has a passion for creating highly usable products that are also beautiful and interactive. As a design lead on the team, she determined the visual language for our product and led the development of the product prototype.

DESIGN LEAD

Katie Johnstone

Katie is an experienced designer and strategist with a background in marketing, analytics, and content design at nonprofits and startups. Her mantra is to produce joyful, meaningful designs. As a design lead on the team, she hosted ideation sessions and spearheaded the product strategy.

PART 2

Research
Process

Research Overview

7
Research Methods

101
Research Participants

Our primary project goal was to create a design solution informed by user research – particularly focused on both aging adults and adult children. We employed a variety of methods to leverage the benefits of each, resulting in a deeply immersive experience that led us to be truly empathetic of our target audiences. Some examples are shown on the right.

During our research, we spoke to a total of 101 aging adults and adult children. Our pool of participants was diverse, covering individuals between the ages of 30 - 93 across a wide spectrum of socioeconomic backgrounds. We recruited participants from senior centers, CMU's OSHER (a lifetime learning program for retired or semi-retired individuals), and platforms such as UserTesting.com and UserInterviews.com — enabling us to reach a wide range of people. Due to the COVID-19 pandemic, we shifted focus from in-person sessions to remote ones during the latter part of our timeline.

Research Methodologies

Speed Dating
We conducted a series of speed dating sessions with storyboards depicting a variety of scenarios that represented needs around aging-in-place and assessed how participants resonated with them.

Landscape Research
Throughout our project, we continually explored analogous domains, existing solutions in competitive spaces, relevant scientific literature, and consulted with experts in game and persuasive design.

Collage Activity
We wanted to understand underlying emotions, so we conducted a series of collage activities where we asked participants to select images and words that represented how they felt about connecting with a loved one from afar.

Nationwide Materials
We dove deep into the materials provided by Nationwide — studying previous research done in the space, related internal initiatives, and gaining an overall understanding of the business.

Directed Storytelling
To best understand unmet needs and functional gaps, we asked participants to share with us concrete examples of scenarios when they experienced issues connecting with loved ones from afar.

User Interview
We conducted semi-structured interviews with both aging adults and adult children. Through a set of carefully crafted questions we spoke to participants to learn more about the problem space.

Survey
To validate hypotheses and insights from our qualitative research, we gathered quantifiable data around attitudes and desires surrounding the remote monitoring experience.

Target Customers

There are two key user groups, with our entry point being the perspective of the adult children, while considering all the needs of their aging parents.

Aging Adults

Age	57 - 92
Health Status	Healthy - managed chronic issues
Living Status	Independently by themselves or with a spouse/partner
Children	Adult children who live afar

" It's been five years since I entered retirement, and although I can't move as fast, I'm not ready for the rocking chair yet. Without a work schedule, I want to have something each day that I enjoy doing. Maintaining relationships is the most important part of retirement for me. My adult daughter, Stacy, calls me every week to ask how I'm doing, and in turn I can't wait to know how my granddaughter Sophie's doing with her latest music adventure. "

Adult Children

Age	30 - 69
Caregiving Role	Concerned but not directly responsible
Living Status	Don't live in the same household as their aging parents
Parents	Healthy - managed chronic issues

" It's hard to find free time while writing lesson plans as a full time middle school teacher and raising my two children. It's overwhelming when I also worry about my aging father's health and how he's feeling. I feel responsible for his well-being, even though I live in another city - I mean who else will look after him? I try my best to keep in touch through weekly phone calls, but feel frustrated when he doesn't openly share more about how he's doing. "

Key Research Insights

Based on seven rounds of user research, we generated a series of important research insights around user needs and problems.

1 Adult children juggle their own responsibilities and different roles when trying to care for their aging parents.

It's a weighty juggling act

Parents aging at a distance causes their adult children extreme worry, which has only been exacerbated by the COVID-19 pandemic. Adult children have their own personal and professional responsibilities, but must also shift between the roles of a child, nurse, and friend with their parents. This juggling act makes them feel overwhelmed, yet extremely guilty when a health event occurs with their parents.

"It's hard to find the right balance with all my caregiving responsibilities." — An adult child
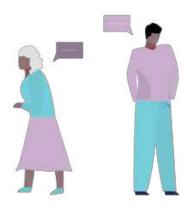

2 There's a power struggle as adult children try to assume more control and become the "parent", while aging adults want to maintain their autonomy and independence.

A tug of war

As parents age, adult children feel an intrinsic drive to care for their parents and serve a more prominent role in their well-being. However, this often clashes with aging adults' strong will to hold onto their role as parents within the family dynamic and maintain their autonomy and independence. This constant tug of war about who is responsible creates a high-conflict environment.

"Growing up, my parents were always strict with me … now I'm being strict with them." — An adult child

3 Both aging adults and their adult children avoid bringing up aging adults' health concerns.
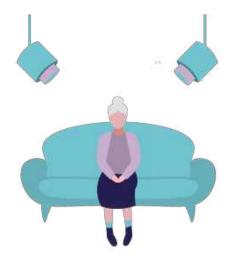
Lack of bi-lateral communication

Aging adults' health decline is challenging for the entire family. Aging adults do not want to burden their families with their health concerns, especially for children at a distance who cannot directly help. They also believe that sharing this information may make them more reliant and less autonomous. For aging adults and adult children, many topics on aging are emotionally charged and avoided because they imply a time when aging adults will no longer be here.

"I'd rather be positive with my kids... they already have enough worry with [their] father." — An aging adult

Because aging adults' health information is often guarded, remote healthcare monitoring solutions promise a sense of clarity and security for adult children. However...
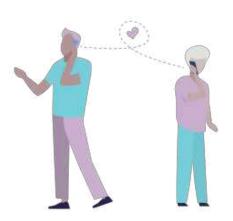
4 Current solutions do not provide value to aging adults; they are mostly unilateral experiences — monitoring aging adults for the benefit of adult children, and are weakly adopted.

A unilateral monitoring experience

Monitoring solutions are not geared towards aging adults. Instead, they tend to address adult childrens' desire for control and security. Many solutions tend to be invasive, intrusive, and require overt conversations about health and decline, constantly reminding aging adults of their age. Aging adults don't have a strong reason to accept and adopt these monitoring solutions.

"I bought mom a thing to wear around her neck to alert me when she needs to call, but mom refused to wear it because she doesn't feel she needs it." — An adult child

5 Opportunities to connect emotionally are missing in current solutions, making for a superficial caring experience.

Caring from afar requires connection

For adult children caring from afar, expressing their love is just as important as managing their parents' health. Unfortunately, a lack of emotional connection with current solutions makes caregiving difficult and ineffective. Additionally, adult children cited a desire for a well-rounded view of parents' wellness. However, most monitoring devices do not paint a picture of parents' emotional well-being.

"I have to show concern for my mom before I can ask her how she's doing" — An adult child

Family is the way in

So how do we build in that emotional connection?

The aging in place experience cannot be a solo journey. We found that what aging adults desire most is to engage with their family, especially their grandchildren.

We identified an opportunity to leverage the love, care, and fun of a multiplayer experience to provide aging adults with what they value most — family connection. Inclusion of the whole family will encourage aging adults to adopt a solution. Increased family engagement can also benefit key areas that adult children want to monitor, like mood, social engagement, and cognitive health.

Summary

Based on our research insights, we identified several "Jobs to be Done," which are goals that we need to help aging adults and adult children achieve.

Aging adults' Jobs to be Done

- Connect with my family
- Reduce isolation
- Maintain my independence
- Avoid burden on family
- Stay physically and emotionally healthy

Adult children's Jobs to be Done

- Reduce worry about my parents
- Make me feel like a good child
- Get information more easily
- Stay in touch with my parents in a way that fits my busy life

PART 3

Design Proposal

Design Process

The entire design process spanned four, two-week sprints, ending in a final construction of a high-fidelity prototype. All prototypes were presented to and tested with both our user groups.

Validating our need through conceptual prototypes
Through ideation methods such as the round robin and Scamper method, we began by generating numerous ideas based on the research and insights we had gathered in the first four months of the project. With a wide variety of ideas, we were able to develop ten conceptual prototypes in the form of storyboards, and test these prototypes through two different rounds with our target customers.

Developing our concept through low and mid-fidelity prototypes
We developed two different low fidelity prototypes, tested, and then narrowed on the concept for a family engagement platform. We then designed the mid-fidelity prototype, where we tested the concept of shared family challenges as well as different versions of a health analysis dashboard.

Refining for the high-fidelity prototype
With strong validation of our family engagement platform, we created and tested our high-fidelity prototype. We developed it to show the main features of the platform with interactions.

6
Rounds of user testing
Using techniques such as Speed Dating, Interviews, & Think-Aloud Protocols.

10
Concept ideas
From smart home systems to virtual assistants to a legacy management platform

56
Paticipants
Including both aging adults and adult children

6
Prototype iterations
From paper sketches to medium-fidelity wireframes to an interactive prototype

Guiding Principles

We developed a set of principles to guide our design concept and make sure we address the user needs we gathered in the research phase.

Bring family closer together

Use multigenerational family engagement as an entry point to help achieve other caregiving goals.

Cater to different and changing health concerns

Introduce personalization and customization in the data collected to cater to adult children's different and changing needs.

Make detecting declining health easier

Focus on analyzing long-term trends to help identify aging adults' gradual health decline.
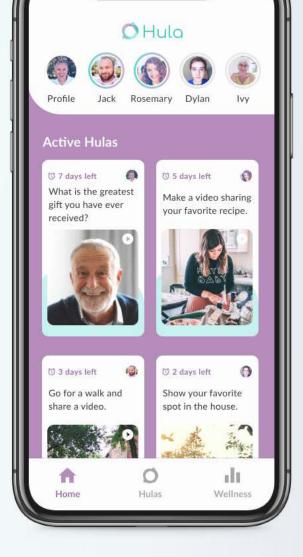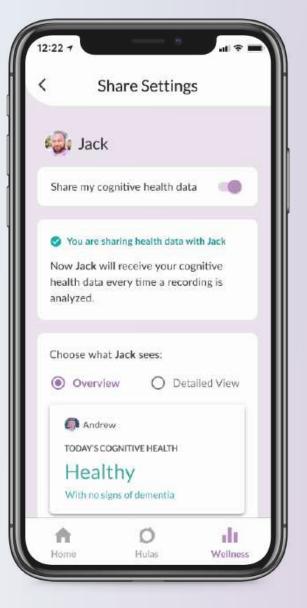
Be respectful of privacy

Respect aging adults' desire for independence by giving them control over who they share health information with and how much is shared.

We designed a family communication platform that fosters multigenerational connection and improves well-being. The platform allows adult children to unobtrusively monitor their parents through videos, and provides health data to help detect a gradual health decline.
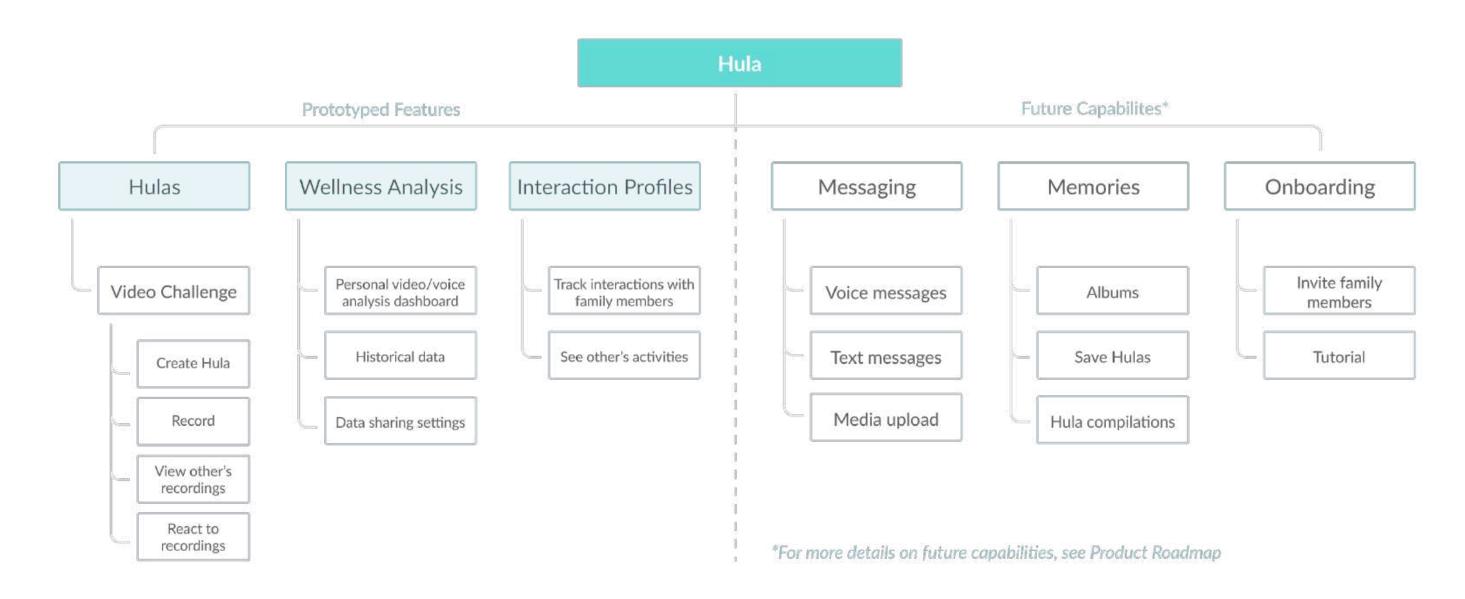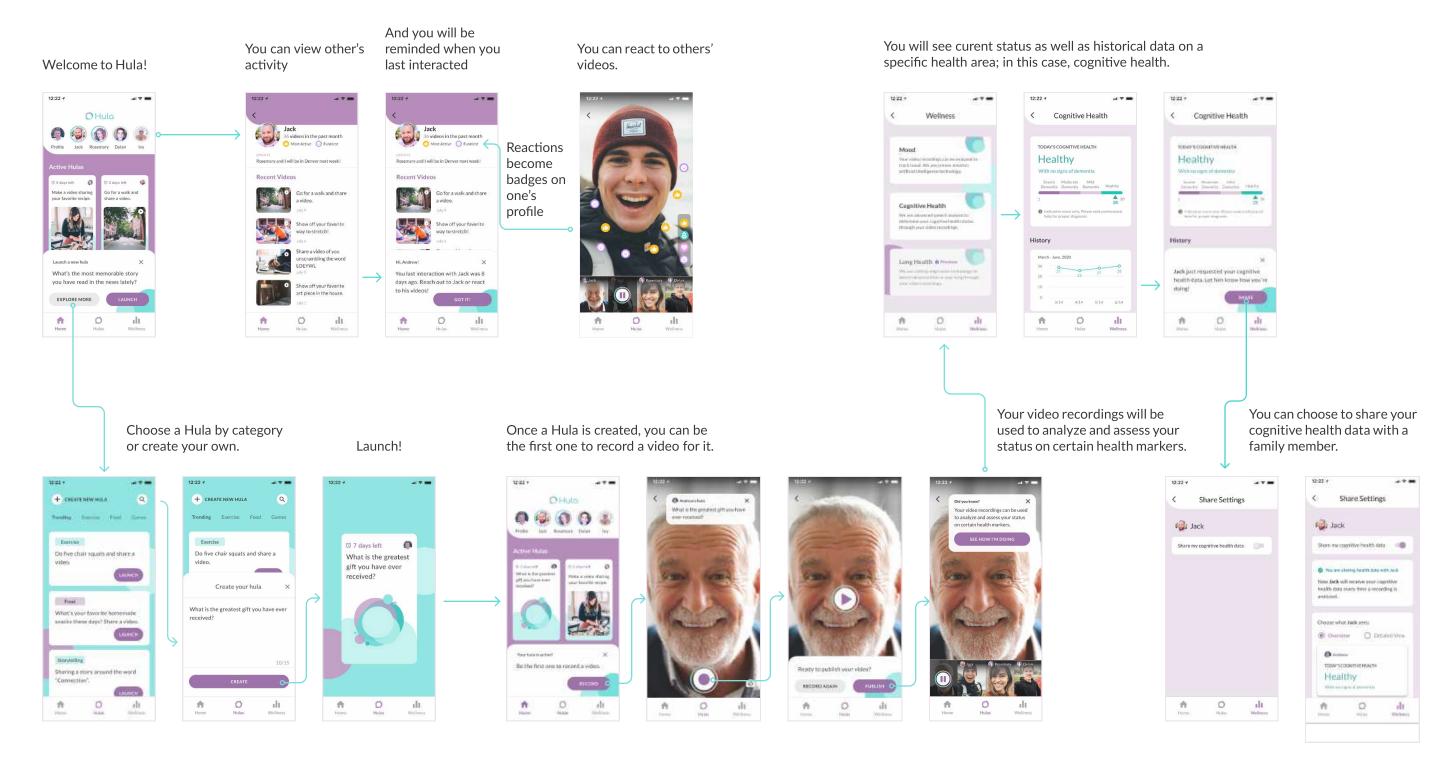
Site Map

The complete vision of Hula involves a robust set of features. However, we focused our efforts on prototyping the key features at the core of our product: Hulas, Wellness Analysis, & Wellness Sharing. The platform provides fun video challenges, known as Hulas, based on family-appropriate topics that are also aging adult friendly. The wellness data dashboard allows all members to view and track their health. The platform allows for health information sharing between family members in an easy and customizable way. In the next sections, we provide more detailed information and hi-fi designs for each area.

Hula

Prototyped Features

Hulas	Wellness Analysis	Interaction Profiles
Video Challenge	Personal video/voice analysis dashboard	Track interactions with family members
	Historical data	See other's activities
	Data sharing settings	

Video Challenge:
- Create Hula
- Record
- View other's recordings
- React to recordings

Future Capabilites*

Messaging	Memories	Onboarding
Voice messages	Albums	Invite family members
Text messages	Save Hulas	Tutorial
Media upload	Hula compilations	

*For more details on future capabilities, see Product Roadmap

User Flow

Welcome to Hula!

You can view other's activity

And you will be reminded when you last interacted

You can react to others' videos.

You will see curent status as well as historical data on a specific health area; in this case, cognitive health.

Reactions become badges on one's profile

Choose a Hula by category or create your own.

Launch!

Once a Hula is created, you can be the first one to record a video for it.

Your video recordings will be used to analyze and assess your status on certain health markers.

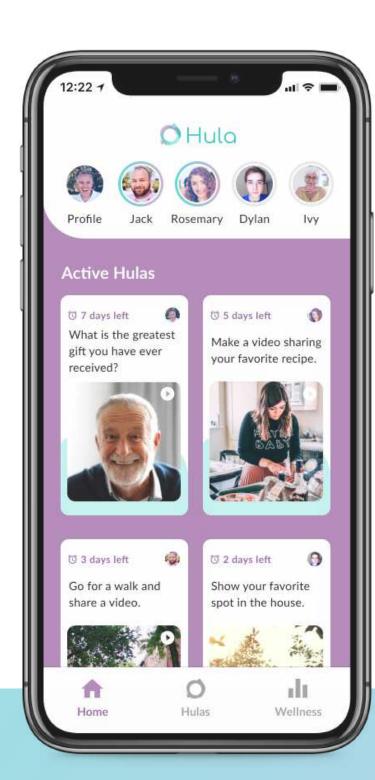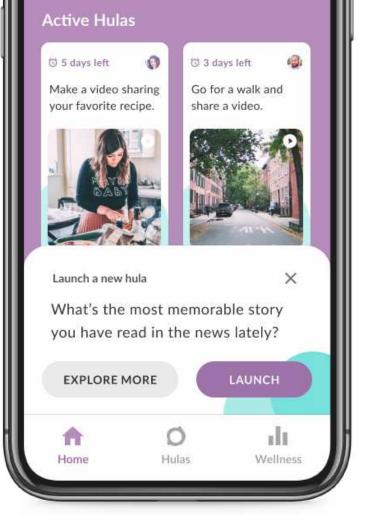You can choose to share your cognitive health data with a family member.

KEY FEATURE

Hulas

The platform's center of engagement is around the assigned Hulas each week (or by a frequency set by a family administrator). The concept of Hula challenges was inspired by the ethnographic research we conducted throughout the project. Aging adults continually expressed the desire to connect with their family (especially their grandchildren) and to have routine and fulfilling activities to fill their week. These Hulas present a fun spin on keeping the family engaged and help everyone keep up to date about each other's lives. This lessens the need for adult children to constantly ask invasive questions to their parents to find out about their health and overall well-being.

These challenges engage the whole family, and aging adults can see their own family participating and not feel constantly monitored by their children.

The Hula Bank

For our preliminary conceptual design, we identified six different topics of Hulas as the initial set for the Hula bank. These six themes are identified based on our user interviews with aging adults and their children, as well as referencing a study in Geriatric Nursing surveying 5,247 adults 65+ about their favorite activities.

1. Food

Food and recipe sharing is a universal topic across families and cultures.

> Ex: What's your favorite homemade snacks these days. Share a video.

3. Brain Games

Enjoy stimulating different parts of the brain and promote cognitive health.

> Ex: Share a picture of you unscrambling the word LOEYWL.

5. Art & Craft

Fun and hands-on activities for everyone to try something new.

> Ex: Do a quick paper sketch and share with your family today.

2. Movie & Book

The family can come together and share their thoughts.

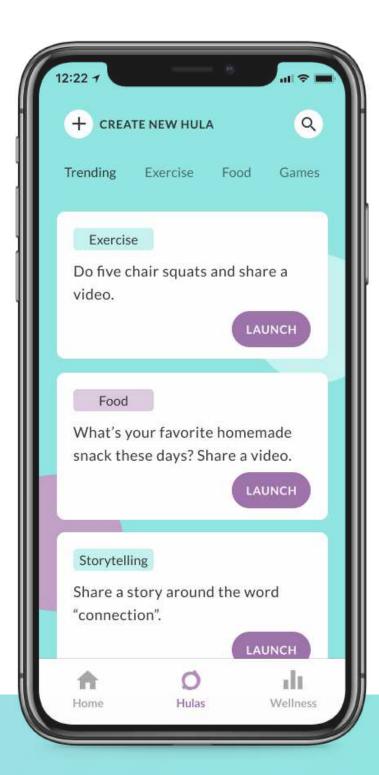> Ex: What movie did you watch in the past month? How did you like it?

4. Exercise

Low impact movement to maintain physical health and energy.

> Ex : Go for a walk in your neighborhood and share a picture.

6. Storytelling

Emotion, legacy, and history can bring different generations closer.
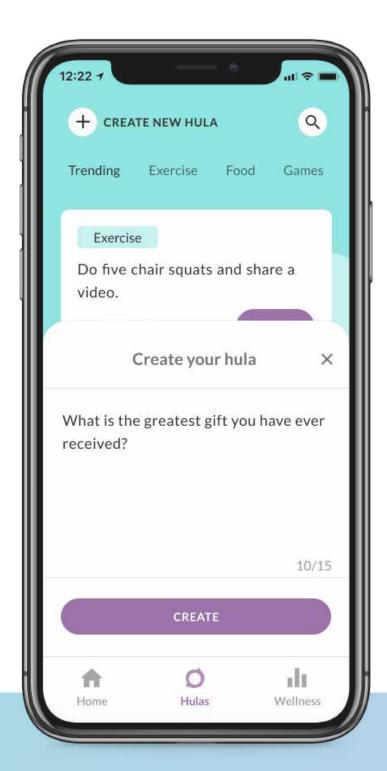
> Ex: What is the greatest gift you have received?

Content Personalization

Taking into account the desire to create something original and unique, the platform allows for members to create a Hula for their family.

In a future release, the Hula generator will have a machine learning algorithm to help personalize content based on user profiles, preferences, and popular Hulas. In user profiles, members can indicate their interests to help customize their experience. Either once a month or post-completion of a Hula, members can rate the Hula on how enjoyable it was, and this can help provide insight into which types of Hulas are preferred.
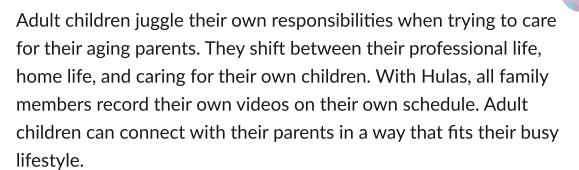
In addition, the Hula screen can provide recommendations based on wellness analysis and requests from adult children. If the analysis is able to detect a slight decline in memory or cognitive capability, then it might recommend a cognitive exercise. It could also recommend a follow-up challenge to provide further insight for an adult child on a specific health criteria.

Value to Cutomers

Catering to adult children's busy lifestyle

Adult children juggle their own responsibilities when trying to care for their aging parents. They shift between their professional life, home life, and caring for their own children. With Hulas, all family members record their own videos on their own schedule. Adult children can connect with their parents in a way that fits their busy lifestyle.

Glean health information through videos

Through testing, we found that adult children were able to glean important health information through Hulas their parents completed. Video is a strong medium for identifying nuances and changes in health, and children were able to identify concerns around their aging parents' well-being through these short videos without the need for conventional and intrusive monitoring solutions.
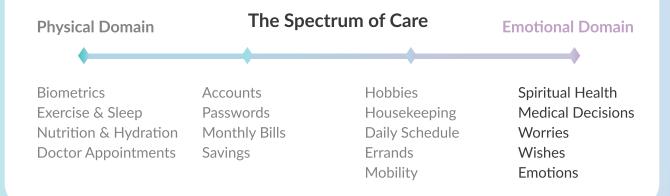
Facilitate family connection

Hulas provide aging adults with the most valuable thing they desire — engagement with family, especially grandchildren. In order to benefit the aging adult and drive adoption, Hulas can facilitate family connection to leverage the love, care, and fun of the familial experience.

Emotional connection completes care

In the spectrum of care (see below), existing monitoring solutions only promise insight into aging adults' physical health — they do not paint a picture of parents' emotional well-being. Increased family engagement can benefit key areas that adult children want to monitor, like mood, social engagement, and cognitive health — addressing the emotional domain to get a more complete picture.

The Spectrum of Care

Physical Domain — Emotional Domain

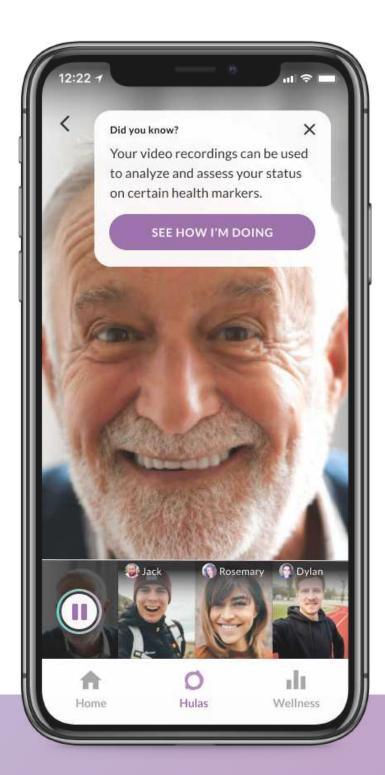| Biometrics	Accounts	Hobbies	Spiritual Health
Exercise & Sleep	Passwords	Housekeeping	Medical Decisions
Nutrition & Hydration	Monthly Bills	Daily Schedule	Worries
Doctor Appointments	Savings	Errands	Wishes
		Mobility	Emotions

Wellness Analysis

The platform connects aging adults with their family, while the well-being analysis feature also enables users to unobtrusively monitor their health. Family Hula recordings will serve as raw materials for voice and video analysis to detect changes in key health determinants, such as mood, cognitive health, and physical pain.

However, the key is to position our platform as a family well-being solution where all members can track their own changes over time. This may help adoption by aging adults, as it won't be just another "senior app" specifically targeted at them for monitoring. Additionally, our solution leverages the desire of people to stay healthy — enabling families to keep an eye on each other's well-being.

The analysis provided should serve as general information about health — it is NOT designed to serve as a fully-fledged medical assessment tool. The intention is to provide family members with information that can serve as the first step to initiating a candid conversation around well-being. In order to ensure this is clear on the platform, Nationwide should continue exploration around the following:

1. Clear language that communicates the analysis will not replace a clinician's assessment

2. Provide appropriate next steps when there's a flagged change in a health area

Technology Feasibility

Emerging technologies are currently capable of using video and voice for health analysis. There are several existing applications that do this already, as well as successful university research and initiatives at the forefront of furthering these technologies. Our hope is that through our solution, Nationwide can look to the future and place itself as a key player within this emerging space. We identified five health areas that are feasible for analysis based on existing companies and technologies. We recommend Nationwide begin by looking into the health areas and companies listed to the right.

Health Area	Medium	Company / Technology	
Tremor	Motion	Apple's Movement Disorder API	
Physical Pain	Video	PainChek Intelligent Pain Assessment	IMOTIONS
Emotional State	Voice & Video	:) Affectiva	Project Priori
Cognitive Health	Voice	WINTERLIGHT LABS	neurotrack
Lung Health	Voice	cordio Medical Speech Processing Platform	Voice.ai

Cognitive Health

Tech Partner
WinterLight Labs has developed AI technology to monitor cognitive impairment through speech, which is currently being used in research and clinical settings. Most promisingly, their technology is able to predict cognitive status using a mere 2 minutes of speech. Their research on a linguistic framework has been accepted into the NAACL, a top-tier conference in computational linguistics and artificial intelligence. WinterLight Labs has partnered with prominent companies, such as Johnson & Johnson and Vivoryon.

How the analysis works
Currently, a participant is provided with an image and asked to describe it for 1-5 minutes. The audio recording is used for analysis on acoustic, cognitive, and linguistic states.

To assess effectively, a baseline will need to be established for each user.

How the tech works
WinterLight Lab's voice-based AI analyzes articulation, lexical diversity, semantic content, and syntactic complexity. The results are scored using the MMSE (Mini-Mental State Exam) scale. Additionally, their ongoing research promises to apply more accurate technology that analyzes pauses, speaking rate, duration of speech, and spectral composition of the sound.

What challenge is needed to collect this data
The capabilities of a smartphone are enough to do this type of task. A request to describe an image can be presented as a storytelling Hula — transforming it into something fun and engaging within the platform.

Emotions

Tech Partner

Affectiva Media Analytics is an industry leading expert in AI emotion analysis from videos. Affectiva is currently being utilized in advertising to monitor people's expressions when watching adverts. Their technology is being used by 25% of the Fortune Global 500 companies and over 1,400 brands, such as Mars, Kellogg's, and CBS.
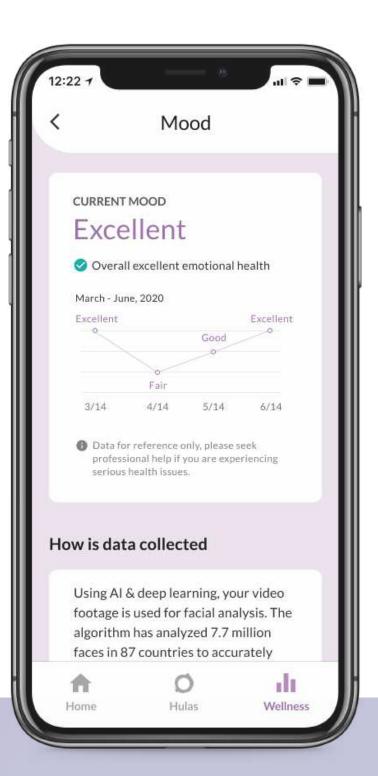
How the analysis works

The technology uses AI and deep learning to analyze human facial expressions from video footage. This could be monitored over time to signal any changes. The database and algorithm has been trained from 40,000 ads, with 7.7 million faces analyzed in 87 countries. Currently the technology is able to measure 7 different emotions and 20 facial expressions.

How the tech works

Affectiva's technology leverages deep learning through a model that analyzes a variety of cues manifested through voice and facial expressions. Their technology identifies changes in facial muscles that occur across emotions, subtle facial expressions (e.g. an eye twitch), fluctuations in pitch, resonance, and melody, and pause patterns.

What challenge is needed to collect this data

The video footage from Hulas, particularly where a person is looking and talking directly into the camera, can be used for the analysis. The Hula could be someone telling a story or speaking about something interesting they had just read.

Other Health Areas

In addition to Cognitive Health and Emotions as examples of how the video and voice recordings provided by Hulas can be used for analysis, we also see opportunities in the following areas:

Physical Pain
Two key players emerged for detecting pain using facial analysis: PainChek, an Australian app, and iMotions, a global biosensor aggregator. These technologies use facial action units derived from recordings of the face to determine pain levels, especially in noncommunicative patients including children and adults with dementia. Based on our concept tests, successful implementation would require further user testing surrounding privacy measures. Some users were also interested in the application of computer vision to assess partial facial paralysis, which merits further investigation into the feasibility of measuring this on consumer devices.

Lung Health
Israeli startup Cordio has released an app proven to detect gradual fluid buildup in the lungs, characteristic of congestive heart failure. This technology requires only a 30-second audio clip daily. Voca.ai, another Israeli startup, partnered with Carnegie Mellon in early 2020 to use voice analysis for detection and treatment of COVID-19.

Tremor
Multiple apps exist which utilize smartphone accelerometers, which have been proven as effective as laboratory-grade accelerometers in detecting tremor associated with Parkinson's (Resting Tremor) as well as Essential Tremor. Accurate measurement for each depends upon whether the user is holding the phone with a resting or extended arm. This technology is currently used to monitor disease progression in existing patients, but may be used in this context to detect abnormal tremor as well as monitor existing tremor in app users.

There are many promising advancements in voice technology, including work piloted by the Mayo Clinic, to detect biomarkers that indicate high blood pressure, stroke, or heart attack.

Value to Customers

See health information, automatically

The Hula app analyzes the content recorded through video and voice to generate the wellness information. There is no additional effort required to gain insight into this information, and no additional hardware required besides for the phone or tablet already in use.

Data is presented with interpretation

The wellness analysis presents a raw score on a scale for each data point, but also provides a coupled interpretation of that score to make it easy to understand. Users know what a "normal" score means and how that affects their life.
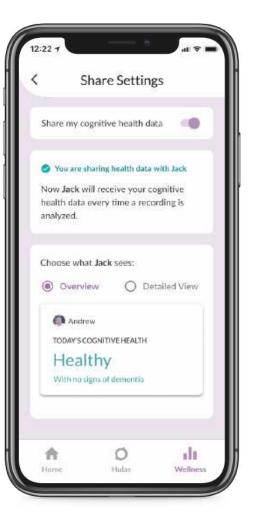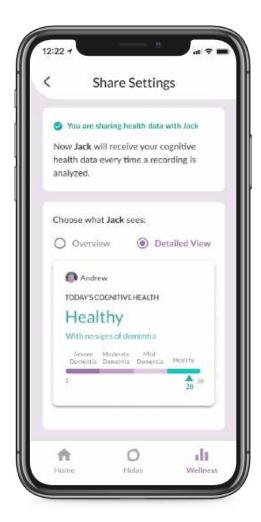
Keep an eye on health, over time

Wellness analysis includes historical data, and plots data points over time. Users can spot trends and flag concerns through this view and potentially share data if they see a change in their wellness.

Wellness Sharing

The platform provides individuals with complete control over who sees their data. Each member can choose with whom to share their wellness analysis and what level of detail is shared. Through our research, we found that aging adults withhold sharing health information because they feel it would burden their family. However, they expressed they would be willing to share it if their adult children requested it. Our goal is to leverage this finding by empowering aging adults to choose who they share their information with, providing them with a sense of control — something they seek to maintain as they age. On the other hand, adult children can gather information on their parents' wellness without feeling obtrusive, invasive, or secretive. Interestingly, by facilitating transparency between both parties, data sharing can serve as the initial step to more candid conversations about care and health.

Value to Customers

A sense of control

Aging adults begin to lose control over a lot of things as they age — their declining health, particularly, can be devastating. As a result, they constantly attempt to maintain control in whatever areas remain. With Wellness Sharing, we can empower aging adults to be the gatekeepers of their own data and take control over who they share their information with.

Enabling sharing, when asked

Through our research, we learned that aging adults are willing to share their health information with their adult children if asked for it. To leverage this opportunity, we recommend including the ability for users to request to view other family member's wellness information. See product roadmap for more details.

All siblings in sync

Families with siblings often divide up caregiving responsibilities and take different roles when caring for their parents. Making sure siblings stay up to date and in sync about their parents' health information can be achieved with Wellness Sharing.
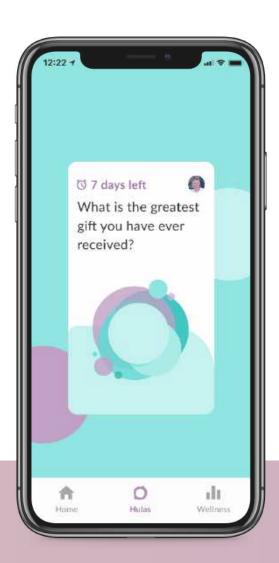
Direct health information

Adult children think that it is important to have information about their parent's health for better caregiving and prevention. Getting the information in a straightforward manner helps children achieve their caregiving goals.

Engagement Strategies

To better understand techniques to promote long-term engagement, our team consulted with game design and persuasive design experts in the HCI field. We ended up incorporating four concepts into our design.
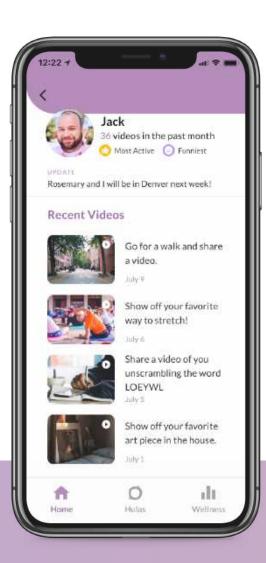

1. Hulas are only active for 7 days

Family members have 7 days to complete each Hula before it expires. By doing so, we can limit the number of Hulas that are active at the same time. This is to avoid information overload, especially for aging adults. Having an expiration date also gives family members a sense of urgency to participate in that specific prompt. Family members who are not interested in a particular Hula prompt won't have to wait too long to see new Hulas either.
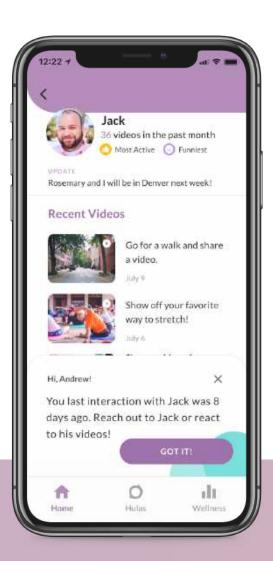

2. Voting on Hulas

From the homepage, users can access each family member's profile. The profile shows a count of how many videos a user has published, as well as reward badges received from others' reactions to their videos. According to game design experts, rewards are a very effective way to make users continue to engage with a product.

ENGAGEMENT STRATEGIES

3. Public Profile

The profile page displays a chronological video feed that provides a cohesive view of the Hulas one has completed over time. The purpose of the public profile page is to provide a sense of accomplishment.

4. Interaction Tracker

When a user visits someone else's profile page, an in-app notification will pop up to inform the last time the user interacted with the profile owner. We use this to remind family members to stay connected and interact with each other.

Accessibility Guidelines

Aging adults face general declines in health. In addition to their unfamiliarity with technology, this requires supplementary considerations for the app design.

We have listed some overarching guidelines to the right. During our design process, we made sure to follow these guidelines to ensure that Hula is accessible to not only adult children, but also aging adults.

These guidelines were compiled from the following resources:

- WCAG guidelines for older adults
- Apple's Accessibility Guidelines
- Designing Digital Technology for the Elderly
- Apps for Seniors
- Touch Target Sizes

1   Avoid font sizes smaller than 16px

2   Contrast ratio of at least 4.5:1 for text and images / background color. Use this tool to check color contrast meets WCAG guidelines

3   Avoid text overlaid on images or graphics

4   Make sure that components of the same functionality are represented the same way across the platform

5   Ensure users know where they are within the platform either through breadcrumbs, site map, or descriptive page titles

6   Pair an icon with text to make it easier for aging adults to recognize actions of components/links

7   Avoid justified or centered aligned text

8   Make sure buttons (target sizes) are at least 9.6 mm diagonally (44x44 px on an iPad). This can increase for people 70+ and may be better for frequent actions.

9   Ensure all actions are triggered by a user request and are not initiated upon a change of content

10 Allow users to review and make adjustments before submitting their content

PART 4
Business Plan

Value for Nationwide

Bringing Hula to market drives significant value for Nationwide as a leader in aging in place solutions.

Deliver on goal to improve the quality of life in retirement for millions of Americans

Monetize aging adults' wellness data through partnerships with health insurers and health-tech companies

Access thousands of users for pathing to future Nationwide services

Using financial advisors as a connection to the consumer, build trust and strengthen customer relationships beyond the financial domain for families managing aging in place

Forge new partnerships across the aging in place ecosystem to strengthen Hula, which will extend to other Nationwide offerings

Partner Value Creation

Hula creates value for stakeholders across the Silver Economy, strengthening Nationwide's position as a market leader.

Data access for population intelligence & risk management

Audience access and integration opportunities for programmatic partners

Superior service and lower costs for preferred distribution partners

Financial Advisors

Value for Nationwide

Monetization of Data Streams

Nationwide can monetize Hula's wellness and engagement data collected at scale for population analysis and risk assessment by insurers, private researchers, and government agencies. Nationwide's own business lines, including homeowner's insurance, life insurance, and strategic partnerships can leverage this data to improve their offerings.

Product Integrations & New Reach

Technology and senior service organizations may gain access to Hula's audience and extend their own product offerings by collaborating with Nationwide. Health-tech partners like WinterLight Labs and Cordio can use the scale of Hula's audience to improve their detection algorithms, while Best Buy Health promises to be a key partner for further service development within the product.
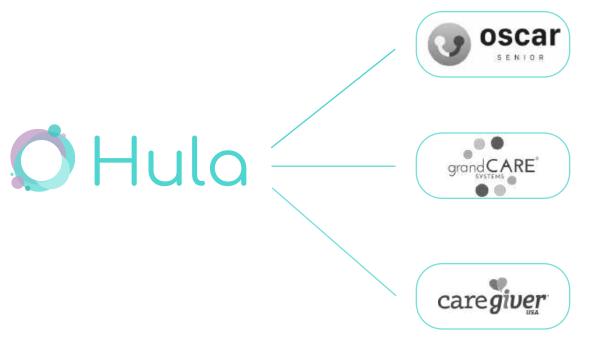
Direct-to-Consumer Distribution

Insurers and senior care organizations who share the goal to improve the well-being of aging adults may offer discounted premium Hula subscriptions to their audiences. This strengthens service offerings and can lower their cost of care. Nationwide financial advisors distributing Hula can differentiate their services to customers making aging in place plans, extending their care beyond the financial realm.

Go-to-Market Strategy

Nationwide can bring Hula to market in two primary ways:

Preferred Partner Model

This platform holds value for partners across the Silver Economy to improve their service quality to consumers. Nationwide can sell the rights to preferred partners to use Hula on their own devices in service of better aging in place care. Nationwide might look to its existing partnership with Best Buy Health to distribute Hula on GreatCall devices like the senior Jitterbug phone. Other interested parties may include health-tech and senior care companies like Oscar Senior, Grandcare, Grandpad, and Caregiver USA.

Consumer Subscription Model

Nationwide can also offer Hula direct-to-consumers as a freemium model. In this model, Nationwide financial advisors are a key asset to bring Hula to consumers, enabling advisors to serve their customers' needs in retirement beyond finances. In preliminary testing, some consumers indicated willingness to pay for premium health analytics features after a trial period. Further testing would be required to determine the best free offering to path app users to paid subscriptions. Options include offering one health metric for free with the ability to "unlock" premium metrics with subscription, or offering intermittent metric reporting with more frequent reporting available for a fee.

We also tested one-off premium Hulas for purchase, enabling any family member to purchase a health metric snapshot of their family based on a special challenge. While less popular than a subscription model among respondents, this offers users the ability to view new metrics of interest and may be a supplemental strategy to encourage upgrades to subscriptions.

The number of metrics available to subscribers as well as the number of family members with data access pose the opportunity for service tiers within the subscription. Nationwide should also consider the opportunity to split subscription payment within families.

Product Roadmap

Release 1

Onboarding

Basic
> Creating family account
> Inviting family members to account

Messaging

Basic
> Direct messaging to any family member

Hulas (See Prototype)

Basic
> Assigning a Hula from bank
> Recording and posting a Hula
> Viewing completed Hulas
> Reacting to completed Hulas

Premium
> Purchasing special Hulas

Wellness (See Prototype)

Basic
> Selecting and editing sharing preferences
> Requesting health data from family member
> Viewing personal health history

Premium
> Viewing Lung Health and Tremor metrics

Memories

Basic
> Saving Hulas to Memory albums
> Viewing Memory albums

Release 1.1

Hulas

Basic
> Select Hula from personalized bank
> Receive recommended Hulas

Premium
[No change from Release 1]

Specific Wellness Analysis

Basic
[No change from Release 1]

Premium
> Request analysis on specific Hula

Memory Slideshow

Basic
> Receive compiled Hula videos every six months

PART 5
Conclusion

Reflection

At the conclusion of this eight-month long journey, we feel extremely honored to have been part of an initiative that's innovating the future. The population we focused on, aging adults, tend to be overlooked in technology. We feel fortunate to have listened to their stories, struggles, and wishes, and transformed them into an actionable vision.

For the guidance and care provided by the Nationwide team throughout this experience, we are extremely thankful. You showed dedication in balancing the project's demands, while also ensuring this learning experience met our personal goals. We will carry the skills and lessons we have learned into our careers. We would like to thank the members from Nationwide: Sumeet, Marcus, Amelia, Micah, and Chris, who gave us the incredible opportunity to be a part of an innovation project in such an important space.

Furthermore, we would like to sincerely acknowledge our faculty advisors Professors Jeremy Smith & Julie Saunders, for their guidance and support throughout the entire project. We would also like to thank Professor Skip Shelly, Professor Geoff Kaufman, and Professor Erik Harpstead for their guidance and recommendations.

Thank you all,

Diana Zhan, Katie Johnstone, Marc Dubin, Missy Chen and Amrita Sakhrani

- Team Neverland -

Hula

Your family circle, connected

- 🖼 **Project Website**
- ▶ **Commercial Video**
- 📱 **Clickable Prototype**
- 📰 **Medium Blog**