

Nettle

CONCEPT

“To have human contact, just to go and have coffee, makes you live rather than just survive. And that’s the biggest need, more than having a machine help you as a substitute for the fact that you don’t have anybody.”

-Dev Rogers (83) in discussion with the author

During my volunteering sessions last fall with an Introduction to iPad class at Senior Planet in New York City, I made the observation that features which younger users consider universally intuitive are often exceedingly difficult for older adults who are new to technology. This led me to theorize that current screen based UI is only intuitive if one has been building on a decade or two of updates and roll outs of new interaction paradigms, or you’ve had an iPad in your hands since before you could speak. Largely due to my dissatisfaction with this system, I was impelled to build a screen free interface. Nettle works intuitively. Members connect to for conversation over the age old activity of making tea. There is no anxiety over placing calls to loved ones who may be busy. For those who want more opportunities to connect and struggle with technology, Nettle is a warmly intuitive technology which builds a chat with neighbors, known or new, into every morning.

A series of low fidelity rapid prototypes brought about the generation of Nettle’s concept. Each iteration was reviewed for usability and for the fidelity to the ends of fostering communication. The design evolved from a calendar product, to a vocal user interface in a range of home products (left), to the known form of a tea set. Product use scenarios for Nettle were presented to a mix of four 70-86 year olds at Senior Planet. The older adults expressed high perceived ease of use. They also commented that the product may be suited to people who are either geographically isolated or homebound.



Nettle

FORM



PRODUCT IMAGES

FROM TOP (CLOCKWISE):
NETTLE, HANDS FOR SCALE,
DETAIL OF TEAPOT

Nettle

SCENARIO



It begins with a Thursday afternoon phone call from Barbara, a community coordinator at The New Jewish Home of New York City, a non-profit organization which helped Mary after her hip surgery a year ago. Barbara explains that they've received a grant to participate in a new program, it involves a new device which makes it simple to connect with the community. Mary has been invited to try it out. A few days later one a rainy afternoon the package arrives.

Mary curiously opens the box. She holds the enclosed pamphlet, pages through it. Its premise is stated upfront "Nettle offers a way to connect over a conversation in the comfort of your kitchen. Make some tea or brew some coffee, sit back and share a conversation with a vetted connection in your community, anytime." She turns pages further in. It seems simple enough, though she's not sure why she'd need such a thing, there's even a number to call if she needs help setting it up.

Mary refers to the guide. It shows a sequence of actions. Pouring hot water into the teapot, removing and placing the lid to begin a conversation. Easy enough, she thinks. Over the next couple of days, she uses it to make tea, but it remains unplugged. On the third day, she plugs it in on a whim. A soft tinkling sound emits. Curious, she begins making tea and pours the hot water into the pot.

A few minutes later Mary hears a sound coming from the base. She removes the mug lid and sets it in place on the base. Before she knows it another voice is saying "good morning". Mary is a bit unsure of what to say at first but soon she realizes that her conversation partner used to go to the same synagogue. They talk about how things are going, what she thinks of using Nettle, Mary settles in and makes herself another cup of tea as the conversation continues. It winds down and Mary, satisfied, asks her neighbor "Now how am I supposed to hang up this thing again?" "It's the lid, when you take it off the base it closes the line." Mary feels a bit of a rush as she ends the conversation with a gleeful snap of the lid into place. She's looking forward to trying it again. It's a fun surprise not to know who's on the other end.



Nettle connects users through a novel application of internet networking and cellular communication. Pouring boiling water into the teapot indicates availability by triggering the temperature sensor embedded below the ceramic vessel. An available contact is pulled from a Node.js server. A whistle sounds once the pairing is confirmed. Opening the mug's lid and placing it in the affordance on the base completes a circuit and triggers the calling connection between users. Similar to a speakerphone call microphone and speaker set into the base leave hands free during a conversation. Closing the mug lid cuts the connection.

Nettle is comprised of a cast ceramic body, CNC milled wooden form, and base which contains the electrical components of the system. The cost of each unit is primarily in the base, meaning replacements for broken cups and teapots would be low cost. Because Nettle incorporates traditional aesthetics of wood and ceramics as well as a habit sequence which triggers the UI, the system has out of the box usability while retaining a tactile charm.

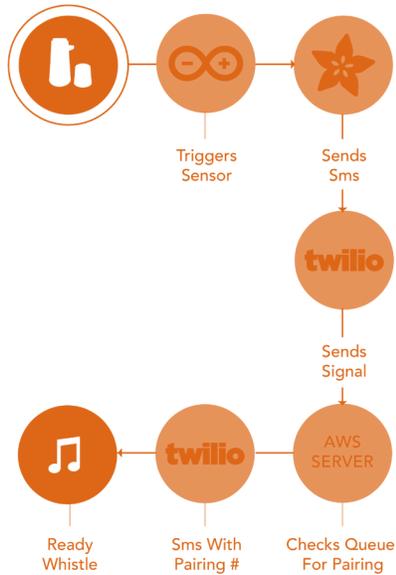


Consulting with industrial designers at Parsons as well as a hands-on hardware price assessment led to the estimated cost of a physical build. My electronics prototyping cost approximately \$100 per unit, however, this price will drop drastically with professional hardware manufacturing. Currently each set comes with a Ting sim card connected to the hardware. The basic monthly rate comes to \$12 for up to 25 conversations with incremental steps in pricing for the minutes used rising \$9 for each additional 500 minutes. Nettle communicates to the main database through SMS. Networked handshake between devices through Twilio would generate less than a dollar in monthly fees for a moderate user. AWS database hosting and computing only minimally affects the cost for users as EC2 On-Demand Instance is about \$0.133 per hour, and only charged during use time.

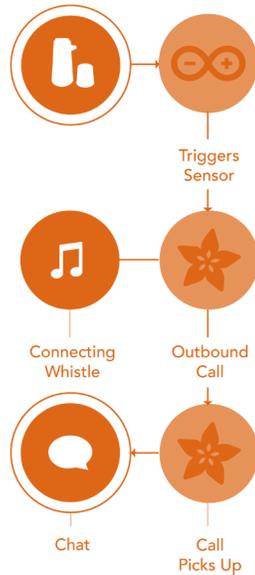
While my proof of concept prototype uses cellular networking to function, price could be lowered by implementing a custom Voice over IP protocol (VIOP). This would have the additional benefit of management, where any abusers of the service could be flagged and removed from the calling pool. Over time a platform for community management could be built up and a manager could easily see how many people are on the platform at a given time, as well as putting forth specific hours for group chats or themes. Nettle could be a part of introducing new residents to an aging in place communities or even a parting gift from rehabilitation, to keep a homebound person engaged to a larger social community.

Tech Map

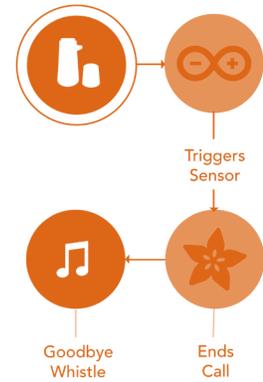
1. User Pours Hot Water



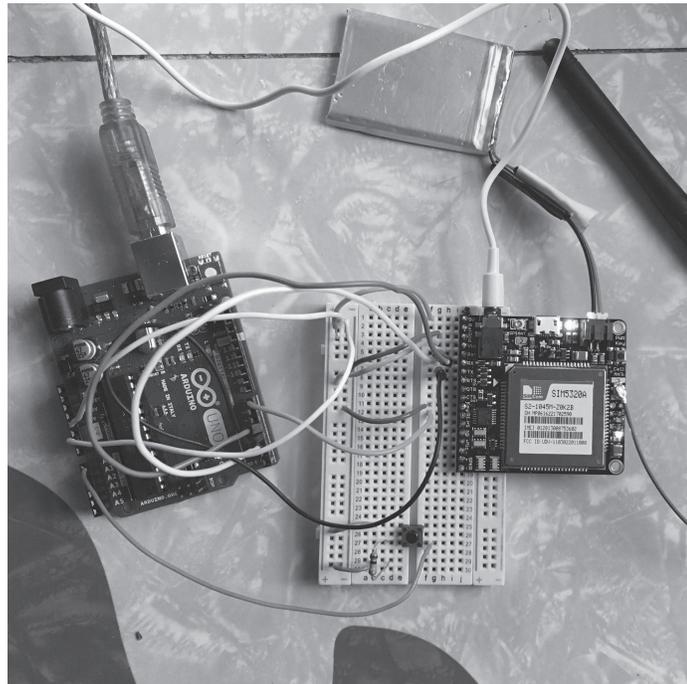
2. User Makes a Connection



3. User Disconnects the Call



Nettle connects users through a novel application of internet networking and cellular communication. A microphone and speaker set into the base leave hands free during a conversation. Pouring boiling water into the teapot indicates availability. Using Twilio, an available contact is pulled from the server. Placing the mug's lid into it's affordance on the base triggers the connection between users and closing the mug cuts the connection.



Nettle



In order to formalize and test the idea of a kettle and mug interaction, the author created a scale foam model and a designed set of interaction Nettle connects users through a novel application of internet networking and cellular communication. A microphone and illustrations. These visual tools allowed her to test with users through a speaker set into the base leave hands free during a conversation. Pouring boiling water into the teapot indicates availability.

Using series of experience, scenario, and technical tests. The author presented Twilio, an available contact is pulled from the server. Placing the mug's lid into it's affordance on the base triggers the connection scenarios to older adults at Senior Planet as well as to her community of between users and closing the mug cuts the connection. practice in gerontology, product design and the cohort of design and technology graduate students of Parsons School of Design.

Alongside those tests, a series of low fidelity rapid prototypes brought about the generation of interaction flow. Each iteration was reviewed for usability and for the fidelity to the ends of fostering communication. Product use scenarios for Nettle were presented to mix of four 65-86 year olds at Senior Planet. The older adults expressed high perceived ease of use. They also commented that the product may be suited to people who are either geographically isolated or homebound. Insights gleaned from iterative prototyping and testing have influenced Nettle's design.