Proposal - AssistantS Capability Prompt (AssistantSPrompt)

Introduction

Our team was assigned the task of coming up with a new idea for AssistantS's planning season. We conducted multiple user interviews to find out the general opinions about AssistantS and some of the most common views and concerns that were discussed were that:

"I only use AssistantS to set alarms and reminders."

"Wow! I didn't know that AssistantS could do so many things. That's impressive."

"It's just faster to type than to speak to AssistantS."

"Shortcuts would make my life so simple. Thanks for telling me about it!"

"I could split bills through AssistantS? Great! I'll do that from now on."

Through these interviews, the most prominent issue that we observed was that a lot of the iOS users are unaware of most capabilities of AssistantS. Thus, our team came to the conclusion that AssistantS's 'Capability Awareness' must be targeted and our proposal aims to increase it.

Presently Available Features

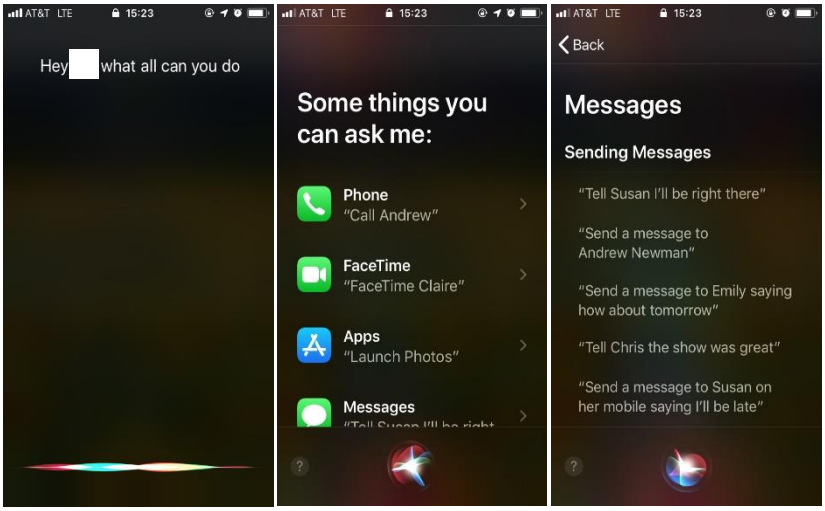
AssistantS's Voice-Enabled Capabilities

Currently, the way to get a list of AssistantS's capabilities is by saying:

"Hey, AssistantS! What all can you do?" (Figure 1.a.)

To which AssistantS showcases a list of iOS apps that it has capabilities within. (Figure 1.b.)

These are broad level features. For instance, "**Camera** Launch Camera" and "**Phone** Call John Doe". When the user selects any one app from the list, the screen displays all the information/work (categorized into sections such as 'Sending Messages' in Messages app as shown in Figure 1.c) that can be requested for that app through AssistantS. Each of these sections have a list of granular level voice-enabled capabilities displayed for the user's assistance (Figure 1.c).



(a) (b) (c)

Figure 1: AssistantS Voice-Enabled Capabilities

Although the list of capabilities is informative, it is pretty time consuming to access and not all users check this list before performing a task. Most users don't even have time to ask AssistantS for a list of its capabilities.

AssistantS Suggestions

AssistantS Suggestions in various apps give options such as 'Search, Suggestions & Shortcuts'. These features are activated on typing text and are not representative of the features that are unavailable via text (Figure 2).

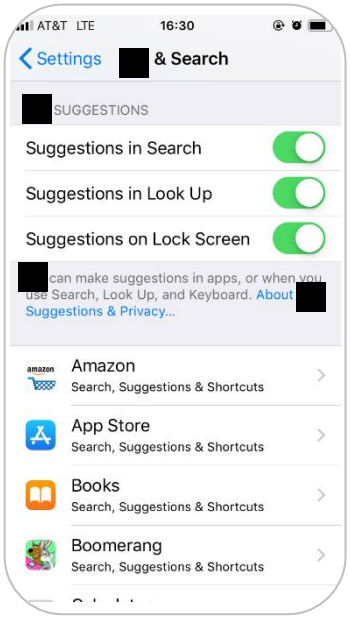


Figure 2: Existing 'Suggestions' feature in AssistantS

Users

Since this feature is being proposed to be added to AssistantS, the users would be all the users of CompanyA devices, who currently use AssistantS or could potentially use AssistantS. Broadly classified, these would include:

- *Students:* Users in this category range from high-schoolers to Ph.D. students who use CompanyA devices for academic and leisure purposes
- *Working Professionals:* This category would include users who have an income source and can be further segregated into
    - *Corporate:* Professionals who do not have much time and need to be tech-savvy to keep themselves organized
    - *Labor:* Users who work in physically intensive jobs and often do not have the flexibility to interface the phone via tap/text
- *Homemakers:* Users who could benefit from identifying handsfree features since they have to work around the house cooking, cleaning and being hands-on parents
- *Baby Boomers (aged users):* This segment of users has a major challenge in adapting to new technology and can thus make the most of voice-enabled help

User Stories

As a *student,*

I want to know features on my phone which can help me with homework and save my time.

As a *corporate working professional,*

I use multiple devices and I want to save time while using all of them.

As a *laborer,*

I want to do more and more work handsfree since I often do tough hand work.

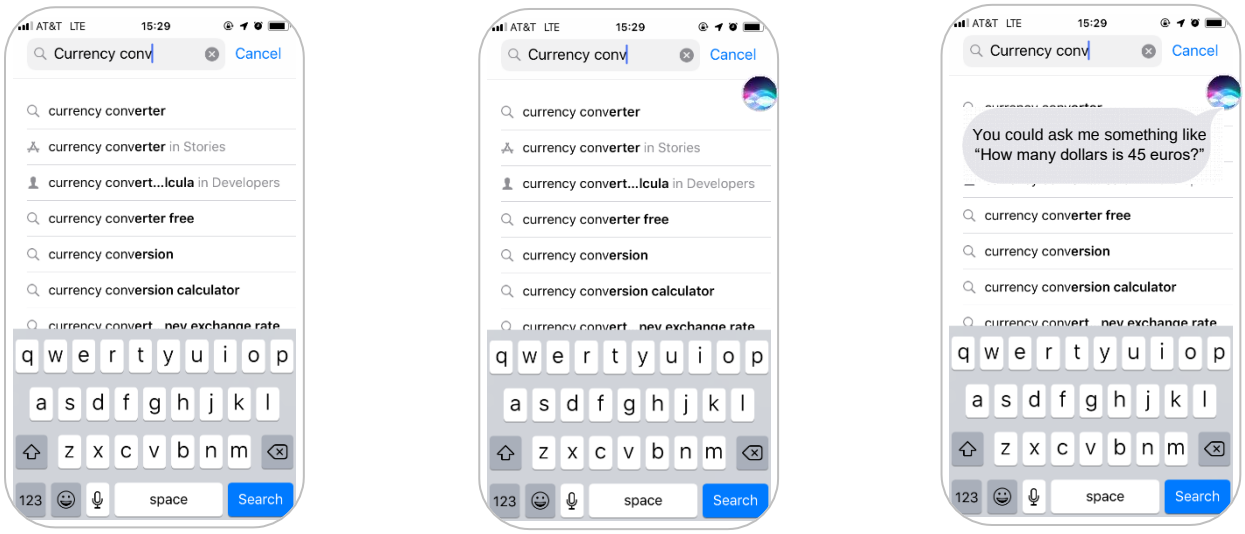
As a *homemaker*,

I work strenuously around the house performing tasks such as cleaning and cooking and if I could just know what all I could ask AssistantS, it would make life easier.

As a baby boomer,

I want to figure out all the features on the PhoneI so that the accessibility gets better for me.

Our Solution



(a) (b) (c)

Figure 3: Introduction of the capability prompt by AssistantS

Every time a user is using a feature or looking for one, AssistantS can provide a small prompt indicative of the fact that it could help the user save time and add efficiency by doing that task instead. For instance:

A user visits the App Store to look for an app for currency conversion, and types in relevant words in the search bar (Figure 3.a). AssistantS could prompt that it could help with the task. In this manner, the user would know that the currency conversion app is probably not needed.

Since this feature could be interruptive, the prompt could be designed to be very subtle (Figure 3.b). An inspiration for the design of this AssistantS Capability Prompt or 'AssistantSPrompt' is the 'AssistiveTouch[1]' feature of PhoneIs. If the user wishes to see what AssistantSPrompt is suggesting, the prompt could be tapped to open a chat bubble (Figure 3.c). Also, for a smooth user experience, this feature could be made optional, i.e. it can be added as a setting in the AssistantS section of 'Settings' (Figure 4).

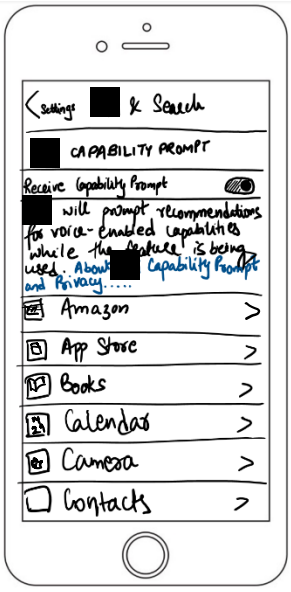


Figure 4: Wireframe for the settings menu of AssistantSPrompt

[1] CompanyA AssistiveTouch Support - https://support.CompanyA.com/en-us/HT202658

Process

The implementation can be carried out in 4 phases (Figure 5):

1. *Development (1 Month):* Development of APIs and the AssistantSPrompt feature using those APIs.
2. *Beta-testing within CompanyA apps (1 Month):* This feature will initially be tested through the beta-testing cohort of CompanyA and the Analytics[2] generated will guide the implementation.
3. *Simultaneous functions (3 Weeks):* This phase caters to two simultaneous actions to maximize efficiency.
    a. Roll-out in CompanyA apps: On the basis of analytics review from phase 1, the modifications are incorporated and rolled-out.
    b. Release of APIs to third-party apps: At the same time, AssistantS team opens its APIs to third-party apps to enable them to develop AssistantSPrompt integrations. In this way, at the end of phase 2, only the roll-out of the integrated third-party apps is left to be completed.
4. *Roll-out in third-party apps (On-going Process):* This will vary from case to case since this is an external roll-out of the feature from other third-party apps and will occur as and when they are able to successfully integrate and test it.

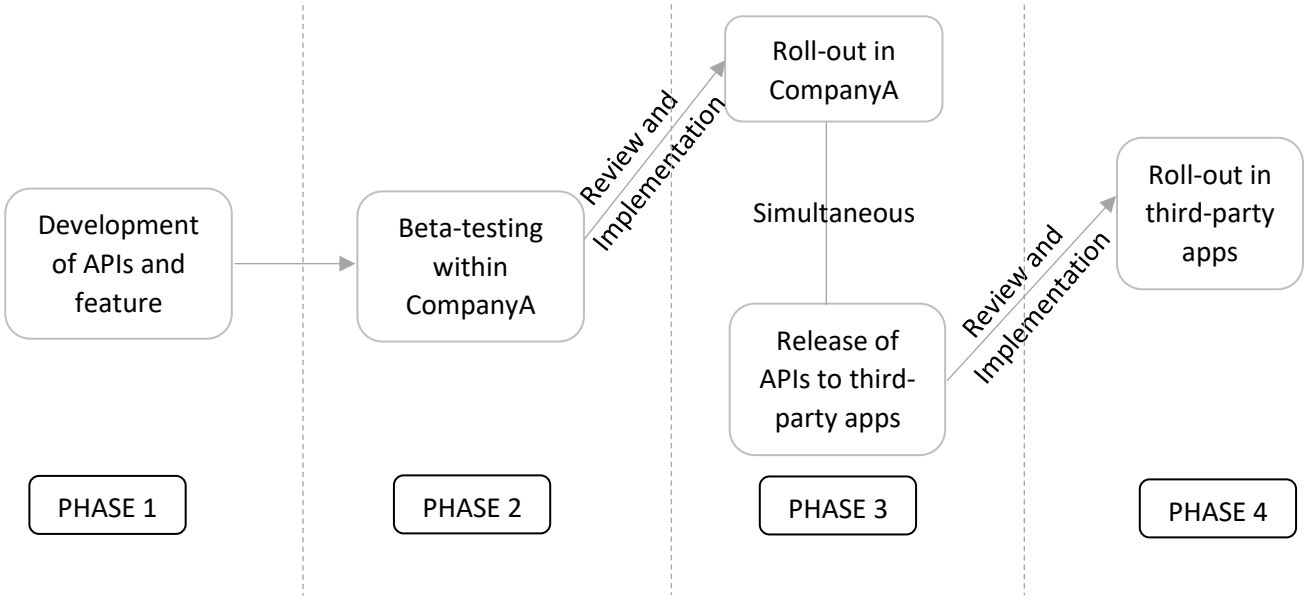


Figure 5: Four-phase implementation process

Teams Required

Internal interviews[3] were conducted. The teams that would be involved with the project would be:

[2] Analytics collects anonymous user data - https://support.CompanyA.com/en-us/HT202100

[3] Internal Interviews were simulated through assumptions about the resources and teams available.

- *Back-end:* The back-end engineering team which was responsible for AssistantS Suggestions since they have the skillset (natural language processing and AI) required and have worked on a similar project in AssistantS earlier.
- *User Interface:* This team will be required to build a smooth user interface to incorporate AssistantSPrompt in all existing apps.
- *User Experience:* This team will be responsible for designing a user-friendly experience for the AssistantSPrompt.
- *Testing:* This team will conduct testing for any bugs in the suggested feature
- *Marketing:* Since the feature is new and is permission-based, this team could market this feature so that there is an early adoption of the feature.
- *EPM:* Our team will work in sync with the other teams to ensure that the project is on track.

Success Metrics

Two factors can be checked[4] to measure success:

- *Tap Rate of AssistantSPrompt:* An increase in the tap rate will indicate the interest AssistantSPrompt generated in users.
- *Command Usage Rate of Users:* Once AssistantSPrompt suggests a voice command to the user, the number of times the user uses that command could be noted. If this number is increasing for all users, then the project could be deemed as successful.

Quality Testing

Quality can be determined by checking for:

- *False Positives:* AssistantS may not have the capability to do a task but prompts the user to ask AssistantS for it.
- *False Negatives:* AssistantS may have the potential to complete a task but fails to prompt it.

Challenges and Risks

Identification

- Users:
    - They may be concerned about privacy since AssistantS is reading the user's input data at all time.
    - Repeated false positives may annoy the user since it would waste time instead of improving efficiency.
- Operational:
    - High number of false negatives would lead to loss of potential conversion opportunities for AssistantS's team.
    - The beta testing cohort isn't large and thus the results are not representative of actual values.

Mitigation

[4] CompanyA 'Analytics' collects this anonymous data - https://support.CompanyA.com/en-us/HT202100

- Users:
    - The marketing team can ensure that the ‘About AssistantS Capability Prompt and Privacy….’ link shown in Figure 4 has a mention about how ‘Analytics[4]’ collects anonymous data.
    - Sufficient testing and development iterations should be done to bring down false positives to zero.
- Operational:
    - Repeated tests and iterations can be done by simulating user actions.
    - A/B Testing can be carried out using a control group since the group size is statistically calculated and will give results with high accuracy.