Smart Induction

HCI REVIEW 3

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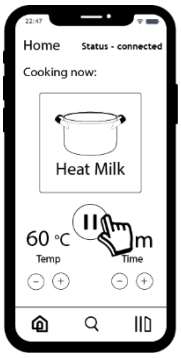
1. Evaluate your interface with Nielsen's Heuristics or Cognitive walkthrough
2. Poster Presentation: (Include: Introduction, scope of the project, problem statement, Requirements, Features, personas, prototype of the new product and navigation map, task analysis for any TWO functionality (tabulation) and references.)

Cognitive Walkthrough to correct a mistake remotely



UA1 - Press the pause button from the application

SD1 – Display shows the vibration animation around the pause button with a small sound

Makes sound/ vibrates

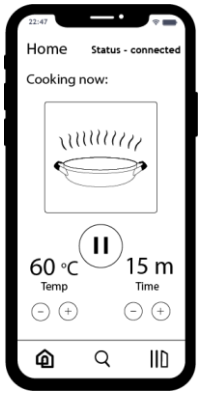
UA2 – Long press the current pre-set

SD2 – There will be a pop up on the display with some options

UA3 – Select the change option from the list

SD3 – Display goes to the library of the pre-set dishes

UA4 – Select the appropriate dish



SD4- timer starts in the display and display returns to the normal mode

UA 1:

Q1) Is the effect of the action the same as the user's goal at that point?

Ans1) The pause button will pause the ongoing activity as this will be the user's initial step towards the goal.

Q2) Will users see that the action is available?

Ans2) Yes, the pause button will be visible on the application everytime.

Q3) Once users have found the correct action, will they know it is the one they need?

Ans3) yes, it will pause the activity which was initiated by mistake by the user.

Q4) After the action is taken, will users understand the feedback they get?

Ans4) yes after pressing the pause button a small sound will be heard by the user and there also will be vibration on the action notifying the user that the induction has been paused

UA2:

Q1) Is the effect of the action the same as the user's goal at that point?

Ans1) yes, by this action a list will appear with some option which will help user reaching the end goal

Q2) Will users see that the action is available?

Ans2) **No, the user must long press the pre-set dish to see the list of options, which is a limitation as user is unaware of the hidden list feature if he/she is not familiar with the application.**

Q3) Once users have found the correct action, will they know it is the one they need?

Ans3) yes, the list has the option to change the dish which is the user end goal here.

Q4) After the action is taken, will users understand the feedback they get?

Ans4) yes after long pressing the pre-set dish the list with change option will pop-up on the screen telling the user that they are going the right way.

UA3:

Q1) Is the effect of the action the same as the user's goal at that point?

Ans1) Yes by selecting the change option user will be able to change the pre-set which is user's goal at that point.

Q2) Will users see that the action is available?

Ans2) Yes, the change option will be on the list which is visible on the application.

Q3) Once users have found the correct action, will they know it is the one they need?

Ans3) yes, it will allow the user to change the pre-set.

Q4) After the action is taken, will users understand the feedback they get?

Ans4) yes by pressing the change option the screen will change and library containing other dishes will appear on the screen.

UA4:

Q1) Is the effect of the action the same as the user's goal at that point?

Ans1) Yes by selecting the appropriate dish we're meeting the user's end goal.

Q2) Will users see that the action is available?

Ans2) Yes, there will be a lot of dishes available in the library which are visible on the screen

Q3) Once users have found the correct action, will they know it is the one they need?

Ans3) yes, by changing the dish user can correct their mistake of choosing the wrong dish in the place.

Q4) After the action is taken, will users understand the feedback they get?

Ans4) yes, the display will go to its normal mode where the timer will start until the food is cooked.

After walking through the task, we provide the limitations of the proposed design here:

> The user must long press the pre-set dish to see the list of options, which is a limitation as the user is unaware of the hidden list feature if he/she is not familiar with the application

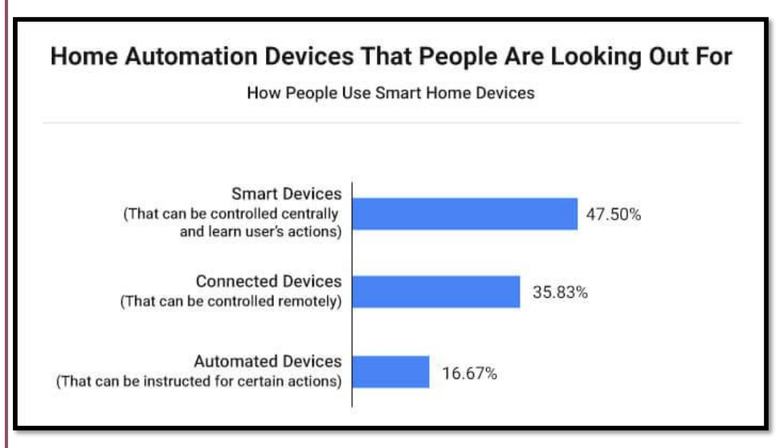
Smart Induction: An IOT based smart cooktop

Saksham Arora, Pranav Gupta | Dr. Rajeswari C | SITE

Introduction

Induction stoves still have a long way to be on par with other home appliances in terms of modernism and have a scope where the **user experience can still be enhanced**. Also, according to the experiences, we know, there are many presets available on almost every stove available in the market, but **people don't generally use them all**. Extending the limitations in the current and rather primitive design, there is a **high degree of crowding in the control panels** and a user may find it redundant and unpleasant.

Adhering to the Human Computer Interaction principles, presented is a product design which has the potential to solve the above mentioned limitations.



A survey showing that 35.83% people are looking for remotely controllable devices.

Source:
GoodFIlms Smart Homes Devices Survey
% of total respondents; N=360.

Scope of the Project

The product aims to implement a Wi-Fi integrated software system inside the stove which can overcome many limitations all at once i.e., a remotely controllable induction stove having a smartphone indication connected to the user's home network.

Through a dynamic touch screen based induction panel, the product is expected to reduce the controls to the utmost necessary ones.

Through the mobile application, the model is expected to **provide other multinational cuisine** based presets which couldn't be placed on the control panel as a button in the application itself. At the same time, it is expected that the design is **not supposed to get complicated** because the presets are to be a part of a mobile application, so the **user can directly search the cuisine** related to their needs. An artificial intelligence based **recommendation system can be integrated within the app** which can recommend presets/ settings/ new features of the stove to the user based on user activity.

And with this effort, the large gap between users and presets is expected to be covered by providing video tutorials on how to and when to use those presets which can provide better results than paper manuals. Also, software updates can be performed on this system.

Problem Statement

To develop the design of an induction stove which satisfies the mobility, convenience and reliability of the current user base by integrating wi-fi technology within the appliance and also providing a mobile application.

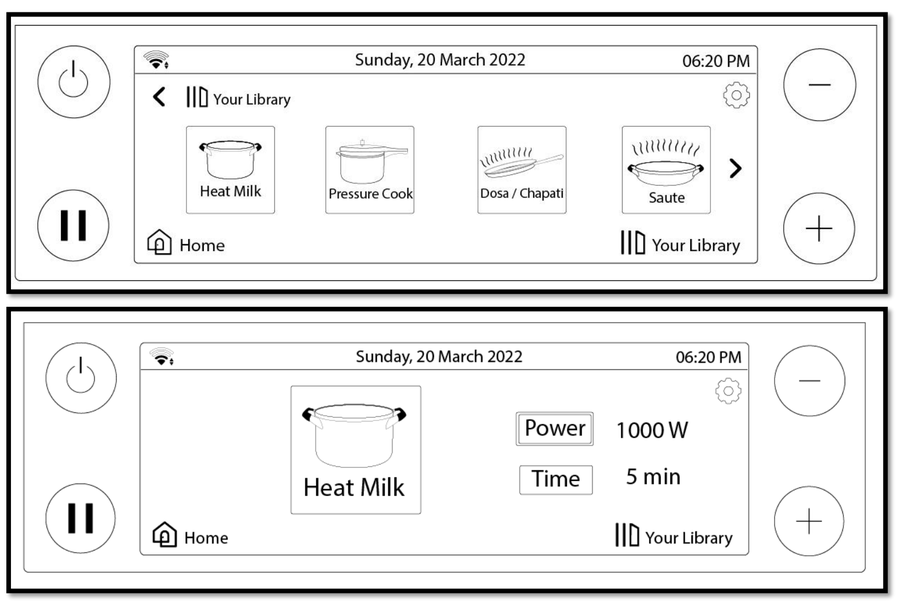
Requirements

To facilitate ease of use, lower crowding of static controls on the control panel, promotion of pre-set usage, better interaction of the user with the system

Features

Provides remote use of application, less crowding of static buttons on the panel, unlimited pre-sets in the global library of the product, feature to check and explore recipes while cooking food.

Prototype

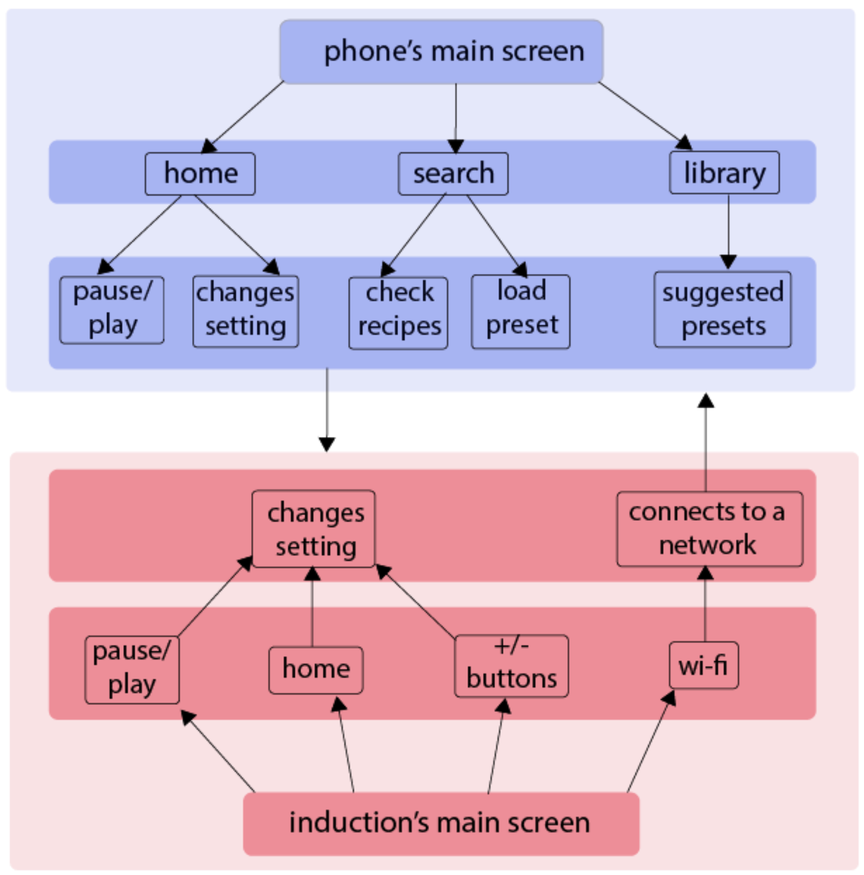


Personas

The product focusses on a target audience of age 12-60 having two broad groups
Teenage/young adults:
Age: 12-25
Physical limitations: varying heights. Specific limitations possible.
Personality: active, impatient, have convenience in tasks
Frustration: can't stand bearing lags in software
Motivation: may need to use the stove when they are alone at home

Adults:
Age: 25-60
Physical limitations: varying heights. Specific limitations possible.
Personality: active, analytical, conservative
Frustration: on failing to do a task decided by them
Motivation: may need to use the stove when they are alone at home

Navigation Map



Task Analysis

0. Change settings remotely
1. Realise the changes to be made
2. Press the pause button from app
3. Go to 'home' on app
4. Tap on 'Heat Milk'
5. Click 'Change'
6. Click 'Deep Fry'
7. Adjust time as required

0. Heat Food (ex - Milk)
1. Pour Milk in any preffered container
2. Connect to Wi-Fi
   2.1 Tap Wi-Fi icon on the status bar
   2.2 Select preferred Wi-Fi
   2.3 If logging in for the first time, enter password. (Password gets saved for future use)
   2.4 Login to same Wi-Fi network on phone
   2.5 Open mobile app
3. Select 'Heat Milk' preset from 'Your Library' either from phone or induction
4. Set temperature/ time on home screen
   4.1 If connected on wi-fi, can use mobile app to set temp/time
   4.2 Else, set temp/time on induction's home screen
5. Click on 'Start'

Plans:
Plan 4: Perform 4.1 or 4.2 accordingly

References

- Andrew Sears, Julie A. Jacko, Human Computer Interaction Fundamentals, CRC Press
- Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale, Human Computer Interaction, Third Edition, Pearson Education