

- Mechanical buttons are clunky
- Static interface
- Need the remote to perform only major functions like Power, Volume, Channel, Play/Pause/Stop Controls



TV Remote

- Need a small pin/ejector to remove tray
- If removed incorrectly, it can leave small marks on the phone
- Small and fiddly, can be lost easily



iPhone Sim Tray

- No visual cue that the valve needs to be pulled resulting in human errors
- No information on the valve state
- Can provide visual info about the state i.e. through a switch



Shower Valve

- No requirement of cold/fan buttons
- Can provide a way to view temp in different scales
- No micro-interaction



AC Control

- Ear plugs can fall off easily which makes them easy candidates to misplace
- In-ear headphones wires affected because of sweat



Headphones

PROCESS

SELECTED CONTROL: VENDING MACHINE



Breakdowns:

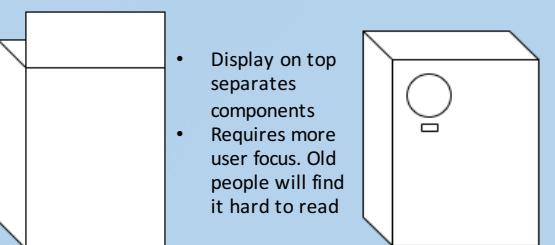
- No signifiers helping user ascertain whether machine is working or not
- No micro-interactions possible
- Have to remember and punch in food codes
- Change collector does not have any visible affordance
- Nutritional information is absent
- Requires user focus at multiple places
- No product recommendation system

Opportunities:

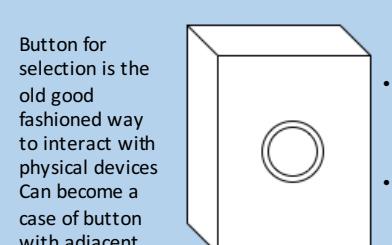
- Touchscreen input that afford easier selection, also providing immediate feedback on selection
- Display that shows nutritional information, monetary breakdown, errors enabling better micro-interactions.
- Camera to identify age, sex of the customer which will be used to recommend food products (food favorites); also prevent thefts
- Diagnostic tools to help operators know machine is not working
- Sensor based customer detection helping machine save energy when not in use.
- Voice based guidance to educate users if they forget collecting their change
- Provide signifier helping user know about the machine status

NEW DESIGN IDEAS

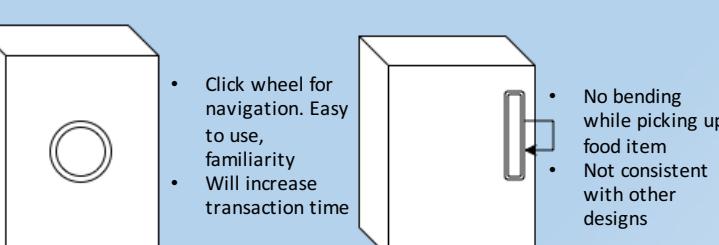
REJECTED IDEAS



- Display on top separates components
- Requires more user focus. Old people will find it hard to read

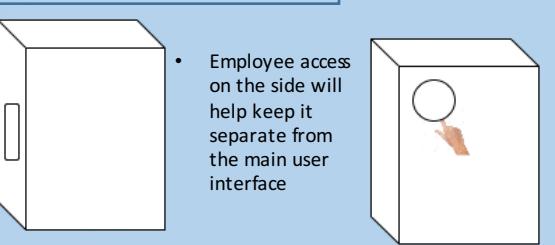


- Button for selection is the old good fashioned way to interact with physical devices
- Can become a case of button with adjacent description

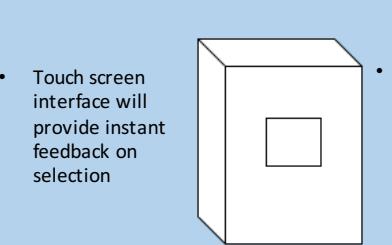


- Click wheel for navigation. Easy to use, familiarity
- Will increase transaction time
- No bending while picking up food item
- Not consistent with other designs

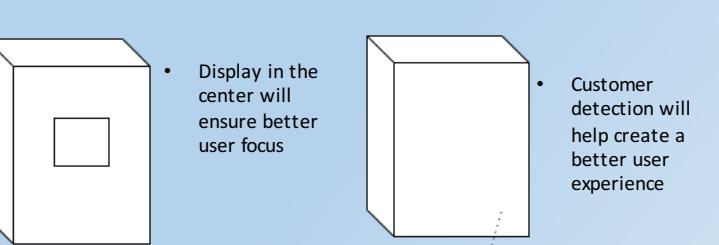
ACCEPTED IDEAS



- Employee access on the side will help keep it separate from the main user interface



- Touch screen interface will provide instant feedback on selection



- Display in the center will ensure better user focus
- Customer detection will help create a better user experience

Actor

- Time indicator is very confusing. Time once set cannot be reset.
- Maximum allowed time is 60 minutes through the dial which might be insufficient
- Suggest a LED display and number pad in place of a dial



Night Light regulator for sport courts

- Difficult to figure out which cord controls what
- Can't really adjust fan speed
- Dial to control speed would be more comfortable



Light/Fan Switch

- Harsh on skin.
- Hair gets stuck under the rotators which makes it difficult to remove them
- Can't use it simultaneously while charging



Electric Shaver

- Can only use mobile phones; no option to use digital cameras
- Can lead to a black eye if not careful
- Difficult to carry it around all the time



Selfie Sticks

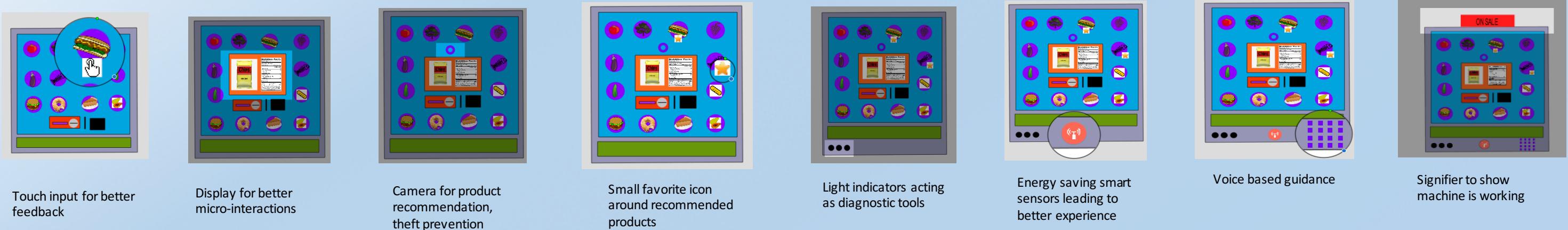
- Harder to clean
- Difficult to tell when the lid is really locked. Boils down to user error
- Have to buy a storage case separately for storing attachments



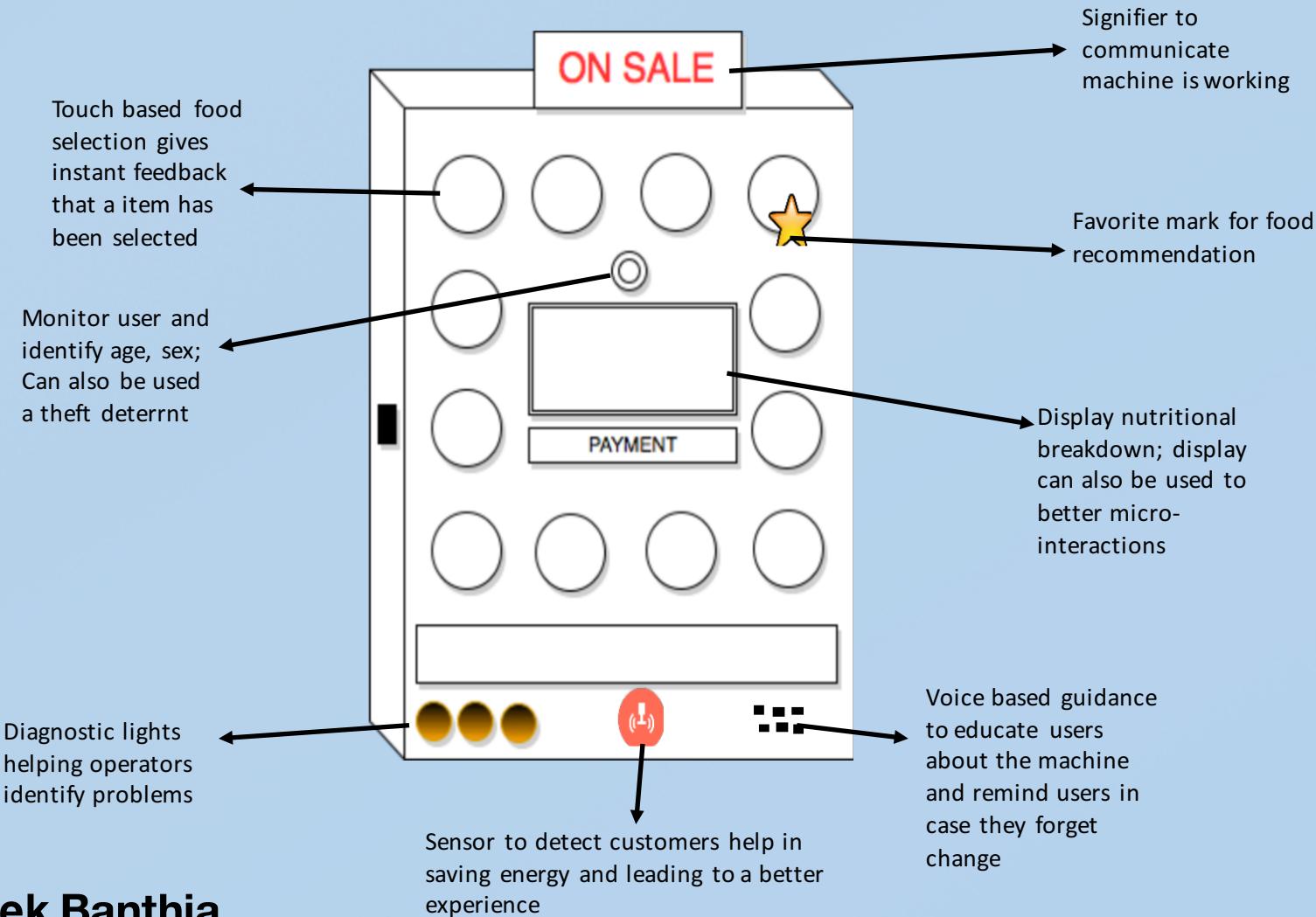
Food Processor

SOLUTION

COMBINATION OF BRAINSTORMED IDEAS



NEW CONTROL DESIGN



COMPARISON

1. MICRO-INTERACTIONS

With the display of the new control design, issues like food getting stuck and connectivity problems will be notified to the user immediately leading to better micro-interactions. The original control had no way of giving out such information.

2. SIGNIFIERS

The original design does not provide any way to let the user know that the system is not working. It's totally up to the operator to put some sort of sign indicating it's not working. This has been rectified in the new design. Also, the new diagnostic tools allow operators to identify common problems associated with the vending machine.

3. USER FOCUS

While using the original system, user might have to move focus from the food section to the number pad while entering the number code. With the new system incorporating touch based interface, the selection process has been simplified.

4. FEEDBACK

The touch interface gives instant feedback on selecting a food item. The user now does not have to be stranded waiting for the machine to respond. Along with the touch interface, the display also acts as a great feedback mechanism.