Digital Microwave Interfaces Response
A UX PUZZLE FOR THE BRAINY

Our Response

The last challenge was to provide a digital interface to a microwave, perhaps a smart microwave or a central panel in the smart kitchen. We considered the interaction as a conversation between a user and the microwave. By doing this, we uncovered a large set of interaction possibilities.

Our Thought Process

To help understand this, we imagined the interaction between me and waiter in a new restaurant and analysed it into several elements. We noted that either I or the waiter can initiate the conversation; I can make requests and the waiter can make offers.

Here are some parts of the interaction.

ENGAGEMENT	I recognize the person as a waiter and approach them
	The waiter catches my eye to signal availability to help
ORIENTATION	I ask the waiter what they offer
	The waiter tells me everything they offer
GUIDANCE	I ask about a particular dish
	The waiter describes it and tells me that it is very spicy, and that it takes a while to cook but is worth it
TAKE ACTION	I order a particular dish
	The waiter accepts my order, asking how I would like it prepared and what type of salad
FEEDBACK	I ask how long my meal will take
	The waiter volunteers that my meal will be a few minutes more
EVOLVE	I am a repeat customer. I say "The usual, please"
	I am a repeat customer. The waiter asks "The usual, sir?"

My interaction with a smart microwave (or smart kitchen) has the same conversational elements. Here are some ways that they could be implemented in the user interface.

ENGAGEMENT

The smart microwave has a touchscreen that says "Tap screen to continue". The smart kitchen has a touchscreen showing icons for all appliances, and a message "Tap an icon to continue". In either case, I tap to proceed.

ORIENTATION

A welcome screen appears telling me the microwave functionality. We want some way to hide this when the user has become familiar with it, and retrieve it if the user needs a reminder.

GUIDANCE

Sometimes I want to know about a function, e.g. Cook/Hold without starting the process. We need to provide some way to get help about just that function, perhaps in the orientation material or elsewhere.
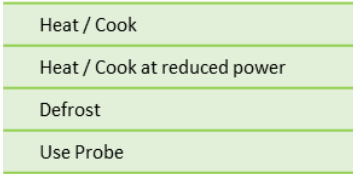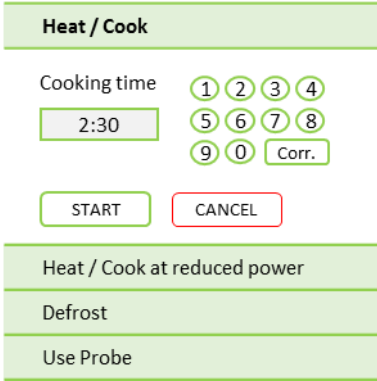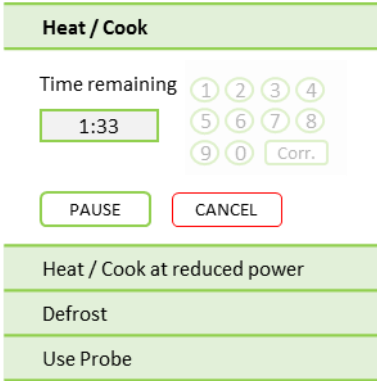
TAKE ACTION

The smart microwave, like the analogue microwave, has buttons that let me take action. When I choose an action, I am prompted for any parameters I need, such as time to cook, power level, etc.

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One way to implement this is with an accordion control.

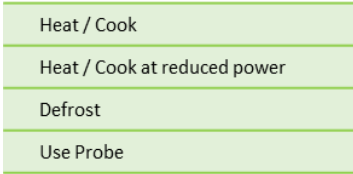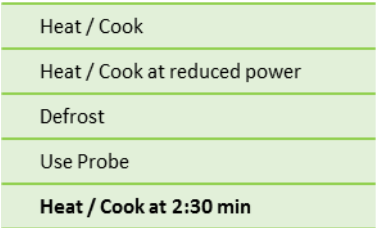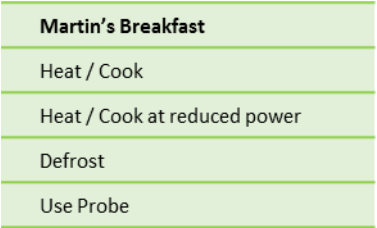| 1. List of Functions	2. Heat / Cook function chosen	3. Heat / Cook process started
Heat / Cook Heat / Cook at reduced power Defrost Use Probe	**Heat / Cook** Cooking time ① ② ③ ④ 2:30 ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ [Corr.] [START] [CANCEL] Heat / Cook at reduced power Defrost Use Probe	**Heat / Cook** Time remaining ① ② ③ ④ 1:33 ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ [Corr.] [PAUSE] [CANCEL] Heat / Cook at reduced power Defrost Use Probe
The interface shows me the options available.	The accordion expands and prompts for the parameters needed for the function.	Once the process has started, I can pause or cancel it. Input controls are disabled.

FEEDBACK

The smart microwave shows me status information such as time remaining (as in Column 3 above). In a smart kitchen setting, several appliances can be in use. The status of all appliances in use can be aggregated into a common status area.

EVOLVE

The microwave recognizes my frequently-used operations, e.g. that I often heat something for 2:30 mins.

It offers this as a new (parameterless) option called "Heat for 2:30 mins". I can keep this option, discard it, or rename it as "Martin's Breakfast". I can choose where I want it to appear in the list of functions.

1. Original List of Functions	2. New option offered	3. New option customized
Heat / Cook Heat / Cook at reduced power Defrost Use Probe	Heat / Cook Heat / Cook at reduced power Defrost Use Probe **Heat / Cook at 2:30 min**	**Martin's Breakfast** Heat / Cook Heat / Cook at reduced power Defrost Use Probe

About the Puzzles

These puzzles show how, by taking the user's point of view, we can generate ideas and select the best ones, innovate, avoid pitfalls, and generally make better thought-out user experiences. They are a fun way of presenting serious ideas about designing information rich solutions. For a more serious and systematic way, see "Experiencing + Architecting Information" at www.theinformationartichoke.com.

To bring this type of training into your organization or educational institution, contact Martin at theinformationartichoke@gmail.com