Good and Bad Design Examples

Example: Microwave Interfaces

The objective of this interface is to operate the microwave. After placing the food inside the microwave, the user has to give the right instructions for the microwave. Microwaves operate mainly on two dimensions: the *frequency* of the electromagnetic waves and the *duration* of the exposure. Hence, both attributes have to be adapted for the food to be heated or defrosted properly.

This particular interface[1] presents itself with a variety of buttons. In the lower part, 0–9 buttons can be used for setting a time or adjusting the internal clock. However, these buttons occupy a lot of space on the interface and are most probably seldomly used. (Who uses their microwave to check the time?) Defining the length of the microwave exposure could be more easily controlled via a small wheel as it is known from radios. This would allow a more intuitive control without taking a lot of space on the interface.

The upper part contains buttons for pre-defined programs, such as "popcorn" or "baked potato". The selection of these meals seems arbitrary and might leave users confused who have a different food they want to warm up. What to do with a pasta dish? Or what if I want to reheat pizza, should I go for "pizza" or "reheat"?

It is further unclear why the "Start" button is centered in the top part. My assumption is that the top buttons are intended as "quick dials" – or "direct access" as the label calls it – and therefore the start should be close to them. However, having "Start" and "Stop/Reset" next to each other would make more sense. Just like it would be more reasonable to have the buttons "Kitchen timer" and "Clock" in closer proximity, given their similar functionality. The interface is further subdivided by a horizontal line

---

[1] https://pisces.bbystatic.com/image2/BestBuy_US/images/products/6935/6935463_sa.jpg

between "direct access" and the other buttons. Yet, the functionalities are not distinct enough, e.g. between "reheat" and "timed defrost". For the developers this may seem like different tasks, however as a microwave user myself, I would not know which option to pick or just go for the direct reheat, as I don't know in advance how long my food will take to warm up.

As a further point of criticism, the labels of the buttons are rather small and especially elder users might struggle to read them clearly.

This modern microwave thus confuses users with a plentitude of functions and buttons presented in an unintuitive order .

For comparison, I want to showcase the following interface: a simple design with two wheels, one for the intensity and one for the time.[2] Both functions are clearly distinct from each other, visually separated and illustrated not only with suitable and clear titles "Power", "Timer", but also with little icons that are pleasing to the eye and might help users who struggle with reading small letters. The icon of the snowflake and the drip is also a clearly understandable label for the defrosting function. (To improve accessibility, the size of the icons could be increased even more.)

The user is not bothered by confusing buttons for digits or complicated multi-stage-heat-up processes. It also does not matter if the microwave knows the current time, as that is also completely irrelevant for its functioning.

Further positive about this interface is that it includes a little graphical tutorial for how long a frozen meal should stay in the microwave. 0.2 kg should stay about 3 minutes, 0.4 kg for about 6 minutes. This way the user does not have to remember such rules for orientation and is also not confronted with too many options as in the upper microwave example.

Apart from being much more handy, this interface allows the user a clear insight into the functionality of the microwave, namely *time* and *intensity* of the frequency. It thus does not seal the inner workings of the device through obscuring quick dials, but instead constitutes them as subjects who are capable of controlling two variables separately.

---

[2] https://www.retcoopstore.com/wp-content/uploads/2019/10/212143_h20mowh.jpg