

Answer the questions below on the Xerox Star system.

- How did it affect the computer industry in terms of features (at least 3) it provides at user interface level?
Explain the features you give.

Ans) Desktop metaphor, generic commands, Direct manipulation and graphic UI, icons, few modes, progressive disclosure, properties of an object and consistency

- Explain why the Xerox Star system failed despite superb user experience in terms of “the three legs of Human-Centered product development” by Donald Norman

Ans) Insufficient technology and marketing.

- What gulfs of execution and evaluation might you find when you try to record a movie currently being shown with VCR?

Ans) A gap between the mental model of a user goal (“I want to record a movie”) and the sequence of actions that controls the VCR (“Turn on the VCR, get the blank tape in it and push a record button”) A gap between the representations that can be directly perceived and interpreted (“the red light is on to indicate the recording is in progress”), and expectations and intentions of the user (“the VCR is recording the movie now”).

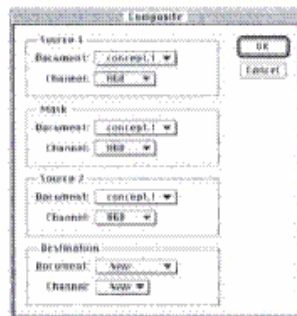
Look at the modal dialog box below and criticize, if possible, each of them using the most appropriate heuristic from the Nielsen’s heuristics. How can we solve the problems if any ?



Source: Interface Hall of Shame

Ans) “Clearly marked exit”. Put the cancel button.

Evaluate 2 designs of the dialog box below in terms of graphic design.



(a)



(b)

Source: Mullet & Sano, p. 96

Ans) (b) is easier to scan labels and groups.

Critique the problems in interface design of the following dialog box.

The screenshot shows a window titled 'R.S.F.' containing a 'Resume submission form'. The form has a 'Personal Information' section with fields for 'Name', 'Date of Birth', and 'SSN'. There are radio buttons for 'Mr' and 'Mrs', and a 'Age' field with navigation arrows. On the right, there are buttons for 'ok', 'CANCEL', and 'Feset' (misspelled). A text box says 'Press this button to record this information and proceed to the next form'. At the bottom right, there is a cartoon character (Bart Simpson) and a text box that says 'Hi! I am your assistant. Let's fill this form together.' The form is cluttered with inconsistent button styles and poor grouping.

Ans).

The use of negative space failed to deliver separation and grouping

Button text styles are inconsistent

Button alignment not appropriate

Assistant help is too anthropomorphic

Age textbox unaligned

Grouping for Personal Information box inappropriate

- IBM has recently designed a pointing device called the CAT, which IBM researchers claim to be superior to their competitors device, the DOG. According to their claim, users can rapidly perform a variety of pointing tasks such as high precision Computer-aided design editing ($D=16$, $W=1$), icon selection ($D=16$, $W=4$), and menu selection ($D=4$, $W=1$). Fitts discovered that the pointing time using a hand held pointing device is a function of the distance (D) and the width (W) of the target, and determined a formula for the index of difficulty as $iod = \log_2(2D/W)$, and for the time to point as $t = C_1 + C_2 * iod$, where C_1 and C_2 are functions of human Information Processor model and treated as device constants. Use Fitts Law to estimate pointing times for both devices in all of the above tasks ($C_1^{CAT}=0.1$, $C_2^{CAT}=0.2$, $C_1^{DOG}=0.5$, $C_2^{DOG}=0.1$).

Ans)

a) Computer-aided design editing: ($D=16$, $W=1$)

$$iod = \log_2(2*16/1) = 5. T^{CAT} = C_1^{CAT} + C_2^{CAT} * iod = 0.1 + 0.2 * 5 = 1.1$$
$$T^{DOG} = C_1^{DOG} + C_2^{DOG} * iod = 0.5 + 0.1 * 5 = 1.0$$

Icon selection: ($D=16$, $W=4$)

$$iod = \log_2(2*16/4) = 3. T^{CAT} = C_1^{CAT} + C_2^{CAT} * iod = 0.1 + 0.2 * 3 = 0.7$$
$$T^{DOG} = C_1^{DOG} + C_2^{DOG} * iod = 0.5 + 0.1 * 3 = 0.8$$

Menu selection: ($D=4$, $W=1$)

$$iod = \log_2(2*4/1) = 3. T^{CAT} = C_1^{CAT} + C_2^{CAT} * iod = 0.1 + 0.2 * 3 = 0.7$$
$$T^{DOG} = C_1^{DOG} + C_2^{DOG} * iod = 0.5 + 0.1 * 3 = 0.8$$

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