M4 L2 Notes

Norman's seven principles

Norman proposed that actions are performed in cycles such as (i) establishing a goal ; (ii) Executing the action; (iii) Evaluating the results.

In 1988 Donald Norman proposed seven rules to simplify design work :

He intended them to be used to transform difficult tasks into simple ones.

1. Use both knowledge in world & knowledge in the head

2. Simplify task structures.

3. Make things visible

4. Get the mapping right (User mental model = Conceptual Model = Designed Model)

5. Convert constrains into advantages (Physical constraints, Cultural constraints, Technological constraints)

6. Design for Error

7. When all else fails – Standardize.

Models of Interaction.

Norman's HCI model consists of three types:

User's Mental Model ; System Image Model ; Conceptual Model.

The User's Mental Model is the model of a machine's working that a user creates whenlearning and using a computer. It is not technically accurate. It may also be not stable over time. User's mental models keep changing, evolving as learningcontinues.

In a way Mental Models are models people have of themselves, others and environment.

The mental model of a device is formed by interpreting its perceived actions and is a visiblestructure.

The System image Model is the visible physical part of the computing system / device.

The Conceptual Model. This is the technically accurate model of the computer / device / system created by designers / teachers/researchers. For their specific internal technical use. Users too have a Conceptual model but it is their mental model unless the user is a technically qualified as the evaluator. In a way as far a the user is concerned mental models and conceptual models are inherent to each other. Designer's too have Mental models of the system. So a Conceptual model of the system needs to be as close as possible to the System's Image Model.

A good device / system will emerge when the starting point of the design process is the user- his/her mental model' (in turn derived through user research- task analysis , walk thoughts Contextual inquiry etc) being the basis of the system image and its conceptual model.

The Conceptualisation of the Designer had in his/her mind is called the *design model* .

The User model (what the user develops in the self to explain the operation of the system) and the system image (the system's appearance, operation way it responds is usually a blend of the users mental model and

conceptual model all rolled into one. (unless the user happens to be an expert)

Ideally, the design model and user model have to be as close as possible for the systems acceptance. The designer must ensure that the system image is consistent with and operates according to the proper conceptual model.

As a basis for his Interaction Model Norman proposed the following levels of abstraction of knowledge of the user :

Task Level

Goal Level

Semantic level

Syntax level

Lexical level

Physical Level.