An introduction to interaction design

4.3 Iteration and interrelated activities

We've talked repeatedly about the four core activities for interaction design: establishing requirements, designing alternatives, prototyping designs, and evaluating prototypes. In practice, the four activities are not strictly separated but overlap with and inform each other, and they need not be conducted in a strict sequence.

The activities of evaluating and gathering requirements go hand in hand. When I am evaluating an existing product, which may have some flaw or which may need updating, I am effectively gathering requirements for the new version of the product through evaluation.

Consider again some of the examples you've encountered in this section:

- Evaluating existing products (as you did in Activity 2) can be a starting point to understanding requirements for a new product.
- In Activity 4 in Section 1, you thought of alternative designs to accommodate limited dexterity when using a phone or remote control, and you sketched rough prototypes of your design ideas.
- Evaluating the Smart Glass revealed less obvious requirements, such as maintaining the user's privacy.
- Evaluating a running app with different users (as in Section 3) can reveal different needs as well as problems with usability.

Note that establishing requirements and evaluation are largely concerned with the design context, and in particular the users' needs and interaction. In contrast, designing and prototyping are largely concerned with the designers' conceptualisation of the interaction.

We tend to think of design in rather concrete terms, in the form of designed objects or products. In fact, every well-designed object or product is the result of a careful process of conceptualisation. The Smart Glass was an imaginary product, described in the text and illustrated in a drawing. Understanding the example relied on you imagining and conceptualising not just the product, but crucially the users' interaction with it.

Making sense of all the complexities of the design context (for example, which users, with which constraints, doing which activities, where, in which social setting), in order to accommodate the key requirements in an interactive product, is a non-trivial task. The necessary understanding of the design context (i.e. user, activity, environment) can only be achieved incrementally through multiple design iterations, and in particular through the iteration of and dialogues between the interaction design activities.

The interrelationships between interaction design activities is captured (in a simplified form) in Figure 21.

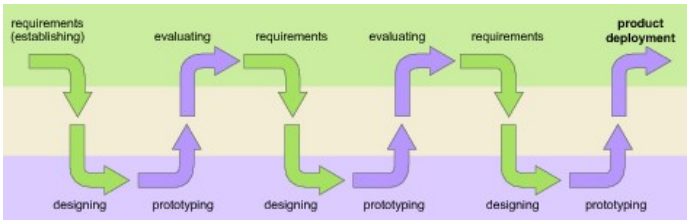

Figure 21 The dialogue between the four interaction design activities that leads iteratively to the development of the interactive product

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The methods discussed earlier can provide input to help a designer start conceptualising an interaction, providing insight into potential users, their activities, and how the environment might affect the interaction. What type of interface might enable the users to make the most of their interaction with the product? The process of conceptualisation needs to balance the designer's openness and creativity (expressed through designing and prototyping) with the designer's systematic attention to and analysis of the design context (establishing requirements and evaluating).

While the iterative process may start with some simple gathering of information to help form an initial idea of what is required, the activity can then move between designing and evaluating several times. Each time we evaluate a prototype design, we are in essence refining the requirements. Having refined them, they can be used to develop a new prototype product which can in turn be evaluated, and so on until a stable point is reached when enough is known about the design. At that point, the process may change to one of production and deployment of the product.

The *design life cycle* (i.e. this iterative movement among the four interactive design activities to reach an interactive product design) is not prescriptive. That is, there is no convention that says that a product should have gone through a specific number of design iterations. Nor is it the case that designers have unlimited time available to iterate endlessly.

Note that, for most interactive products, their design life cycle does not end at the moment they are deployed. After time, a company may decide it is time to launch a new version of the product with improved features. These features may have emerged through real people using the product over time and identifying new uses, new scenarios and hence new requirements that should be added.

The relationships between the main activities of the interaction design process could be summarised in the following diagram.

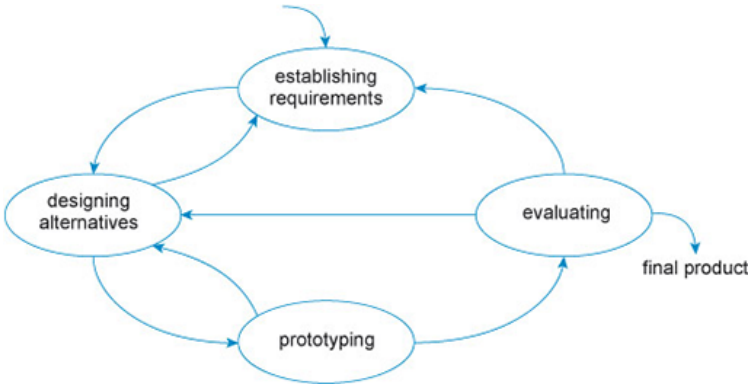

Figure 22 The relationships between the main activities of the interaction design process. Source: Preece et al. (2015) p. 332

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Why sketching and prototyping is important

4.4 Interaction design as a discipline