Above: a quick cardboard model gives the designer feedback on how the design works and how users react and interact. Right: about 200 units were built of the Apple 1 (1976). They were originally sold without keyboard, monitor or even a housing for $666.66 each. After working with this prototype-style machine, a client asked for a protective cover. Apple founder Steve Jobs delivered it with a keyboard and a wooden case. This marked the beginning of Apple computers as we know them today.

INTERACTION PROTOTYPING AND EVALUATION

When can the method be used?

Interaction Prototyping and Evaluation can be used throughout your design project, but is typically employed in low-fidelity prototyping during concept development. Designers often tend to assume that future users will interact with the product in the intended way. Interaction prototypes enable you to quickly try out concepts and check if your assumptions are feasible. In doing so, you can develop and iterate concepts at a fast pace based on actual user feedback. Interaction prototypes can even be used to enhance discussion with clients about users' future interactions with the product.

Interaction prototypes can help you to generate scenarios of product-user interactions. These scenarios can inform the design brief and requirements by providing insight into use situations, sequences of use and the geometrical and material qualities that influence a user's experiences.

How to use the method?

Creating interaction prototypes is a skill that is developed by doing. You can use the method flexibly to envision, detail, check and communicate aspects of your design that will affect future interactions with it. The method orients you and your team to focus on future interactions. Use it on a small scale, either one-off or repeatedly.

Interaction Prototyping and Evaluation is a method that helps you to simulate and test how people will experience future interactions with your design. It helps you to evaluate concepts at an early stage of development, facilitating quick learning cycles during concept development.

You test and observe the users' experience of specific aspects of your design. These observations help you to decide on design characteristics, such as the physical shape and use sequence of a product, and to identify knowledge gaps.

Possible procedure

STEP 1
Make a quick scenario sketch – a Storyboard – of expected future interactions.
STEP 2
Create an interaction prototype, a rough and simple version of the design aspects you wish to explore.
STEP 3
Users or actors use the prototype and act out the interactions as if using a final design. Tweak the prototype. Repeat the process until you are satisfied and ready to resume developing the concept. During this step:
· Focus on the user's behaviour, not words.
· Make sure that observers are recording the interactions.
STEP 4
Evaluate the experienced interaction qualities you saw when the prototype was used. An example of an interaction quality is 'the user interacts with the product *gracefully*'. Link these qualities to the design's properties and revise it as necessary.

Limitations of the method

· Users may mistake this method for Usability Evaluation. However, the method generates insights into the desired and experienced interaction qualities of product concepts. Its results should help you to develop your concept further and feed into a more comprehensive list of design requirements. A final design still needs to be evaluated in terms of a user's actual experience of the product and its usability.

Tips & Concerns

· Give yourself space to develop and explore various prototypes. Building the prototypes is a quick process, especially with more practice. As your skill improves, you can use the method in more collective situations such as client meetings.
· Try to involve someone with experience in improvisation/theatre techniques. However, you do not need to be a good actor or improviser to use this method. Anybody can build simple prototypes and observe how a user's or actor's interaction with it unfolds.
· Try to enact the interactions in gestures, behaviour and events rather than verbally in conversations.
· Developing, enacting and evaluating interaction prototypes should typically take you 2 to 4 hours per prototype.

REFERENCES & FURTHER READING: Boess, S.U., Pasman, G.J. and Mulder, I.J.*, 2010. *Seeing things differently: prototyping for interaction and participation.* DeSForM 2010: Design and Semantics of Form and Movement, 3-5 November, pp.85-97 / Boess, S. U., Van der Bijl-Brouwer, M., & Harkema, C.*, 2012. *Envisioning Use. A workshop technique to share use-related knowledge in product development teams.* In J. van Kuik and R. Staats (Eds.), Design for Usability Methods & Tools, pp. 72-83. Delft: Delft University of Technology / Brandt, E. and Grunnet, C., 2000. *Evoking the Future: Drama and Props in User Centered Design.* Proceedings on the Participatory design Conference, pp.11-20. / Buchenau, M. and Fulton Suri, J., 2000. *Experience Prototyping.* Proceedings of the 3rd conference on Designing Interactive Systems, 17-19 August, pp.424-433.