

# Social Negotiations in Web Usability Engineering

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## EXECUTIVE SUMMARY

*This study of a website development project for a university athletic club illustrates how negotiations between designers and users play a fundamental role in defining website usability. Whilst usability can be ‘objectively’ measured using formal scales (number of clicks required, user effort or error rate to achieve an aim etc.), it may also be subjectively defined as the extent to which a website serves its intended audience. Usability engineering is therefore a social process involving interactions between users and designers that determine what is appropriate for a given context. This case demonstrates the value of a ‘heterogeneous’ approach to website usability that involves engineering this context by negotiating the social alongside the technical. A strong stepwise website methodology that promotes early and continual user engagement – including sign-off of staged prototypes – is seen to be an important facilitating structure that carries these social negotiations forward through the web usability engineering lifecycle to successful project conclusion.*

## **INTRODUCTION**

Usability can be defined in terms of three aspects: effectiveness; efficiency; and satisfaction, which occur in a specified context of use (Spilotoopolous et al., 2010, p. xvii). Activities aimed at improving the usability of a product or system have been described as ‘usability engineering’ (Faulkner, 2000). Different techniques can be used at different stages in the usability engineering process. To generate design ideas at an early stage, designers can undertake various activities with users, for example: product reviews, observations, interviews, questionnaires, ‘brainstorming’ or other types of participatory workshops. Then, in later stages, prototypes can be developed and evaluated by users. These kinds of approaches, which involve active participation by users, are characterised as user-centred design (Marti & Bannon, 2009).

Prototyping is a well-known method for involving users in the development of a system (Ford & Wood, 1996, p. 275) but it can be poorly understood by usability engineering students (Carroll & Rosson, 2005, p. 13). A prototype is a rapidly-developed product which looks and behaves somewhat like the proposed system. Users are asked to try out the prototype and suggest amendments, which can then be quickly implemented and re-evaluated. Prototypes can be categorised as low-fidelity or high fidelity (Rosson & Carroll, 2002, p. 206). A low-fidelity prototype may even be a paper prototype consisting of sketches of screens on pieces of paper which can be manipulated to imitate system behaviour (Holtzblatt & Jones, 1993). Low fidelity prototypes are quick to produce, and allow alternative designs to be explored quickly and at low cost with prospective users. Alternatively, or subsequently, high fidelity prototypes can be built in software and tried out by users. This is helpful in the later stages of the design process, so that users can explore proposed system features and user interface elements. Prototypes test out designers’ understanding of user requirements and allow users to further articulate their requirements. Prototypes may also be ‘throwaway’ or ‘evolutionary’. Throwaway prototypes are prototypes that are discarded, whereas evolutionary prototypes are prototypes refined in response to user feedback and subsequently developed into a fully-functional finished system (Vidgen et al, 2002, p. 7).

Prototyping and usability engineering are social processes that involve discussions and negotiations between designers and users (Sefyrin & Mortberg, 2010) throughout the systems development life cycle. However, most website usability case studies focus on website evaluation post-implementation, rather than showing the ways in which usability engineering is incorporated into the analysis and design stages of a project. Of the few case studies that deal with usability engineering early in the systems development life cycle, two are worth noting here. Laster et al. (2011) stress the necessity of gathering user requirements carefully and correctly, exposing the importance of designer-client interaction in determining the usability of a

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