Opinion

Pay-and-display ergonomics

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One of the most obvious changes in product design today is the proliferation of the microprocessor and the digital information display. Furthermore, we are living in an increasingly connected world. Information can now be easily collected and processed, as well as transmitted and received from everyday household objects.

For product designers, these changes present a wide range of new opportunities and challenges. Successful interfaces blend seamlessly into our lives. Conversely ill matched interfaces can cause confusion and frustration, ultimately leading to unintended errors or rejection of the product. The difference between a successful and unsuccessful interface is often extremely subtle. It is far more than just following heuristic guides. An interface can work exceptionally well in one context, but fail in another. A well-designed interface, displays just the right amount of information, to the right person, at the right time, in the right format. Context and wider system understanding is fundamental.

When designing and developing products where the user interface is fundamental to its success, exploring new interface options are often key. However, communicating the value of new interfaces to project stakeholders, particularly those that have been designed for a specific context, can also pose challenges. One option is to provide stakeholders with access to a functional prototype, typically on a laptop, which allows stakeholders to explore the interface. While this approach is, undoubtedly extremely useful, it often fails to provide context of use. This is particularly apparent when the interface is designed to be used in an environment where unfamiliar activities are taking place – for example a treatment room. In these situations, a video animation can be extremely useful.

DCA recently created a short animation to showcase its interaction design and animation capabilities. The pay-and-display parking meter was selected as a familiar problem that can lead to confusion and frustration. We have all been there, late for an engagement, searching through bags, wallets or the car for

the correct amount of loose change. Surely this could be easier for the user? Advances in telephone payment schemes have gone some way to redress this; however, many still remain sceptical of the underlying system, concerned about unexpected penalty payments.

The short study started by observing drivers using a range of local ticket machines. As a result, a set of four personas were developed and used to identify a wide range of users: the tech-savvy professional, the technology sceptic, the parent with pushchair and young children, and the non-English speaking tourist. Task analysis models were generated that explored the journey from locating the car park, through to parking, payment, and driving away after the visit. These models were explored in detail to identify efficiency savings and opportunities for error.

The resultant concept focuses on flexibility. It has been designed to be identifiable and familiar. In fact, for those happy with the coin payment approach, it works in a familiar, clear and predicable way. For those wanting to pay by credit or debit card, they are presented with a simple control and interface. The display communicates to them in three ways, as the dial is turned the display communicates the cost, the duration, and return time, removing the need for mental calculations. The design also embraces the smartphone, with a payment app. Payment can be specified before approaching the machine. The app can then be used to provide alerts close to parking expiration.

The animation introduces the product and communicates three payment methods, all in just over a minute. It is not intended to replace the physical model or the dynamic prototype, what it does do is offer a concise summary in an easily understandable format. It has been designed to tell a story of user experience in context. As a tool, we are finding this kind of approach great for gaining board-level buy-in for both concepts and the value of human factors and research activities.

You can view the animation at www.dca-design.com/parkd. ❖