

*B.A. O'Mullane, B. Bortz, R.B. Knapp. Design challenges for internet interfaces for older people and widget-based, touch screen solution architecture.*

Interfaces to information on the Internet rely on older users having an Internet-enabled device--often a "hand me up" personal computer that their children decided was too outdated for their own use. Additionally, personal computer operating systems have to cater to the wealth of applications that can execute on such a machine and must be versatile enough to execute on multiple devices. These requirements can present even an experienced user with a boggling array of applications and settings. Beyond this, when a user successfully connects to the internet they must navigate websites, each of which defines its own user interface, which is often geared toward advertising, not presenting users with the information they require<sup>1</sup>.

In a review of studies of web usage by the older population, Arch identifies vision decline, hearing loss, motor skill diminishment and cognition effects as the most common limitations older people face in the use of computer (specifically web-based) interfaces. Furthermore, Zhang et al. conclude that "for different cognitive mode tasks, users...perform differently on interfaces with different intelligence levels."<sup>2</sup> Furthermore, Gregor et al. highlight the wide diversity of user abilities and challenges found particularly in older people.<sup>3</sup> These and other issues compound in complexity when designers and developers are faced with the unique problem of developing interfaces particularly for an older population.

In response to these issues, Gregor et al. call for a shift in focus away from User Centred Design toward a more flexible "User Sensitive Inclusive Design". In a similar vein, Laga et al. underscore the potential "user sensitivity" and ubiquity of widgets across today's web landscape.<sup>4</sup> In this paper we present a novel widget-based, touch screen interface solution that is both sensitive to the challenges outlined above and a realisation of the suggestions put forth by Gregor, Laga et al.

**Methods** This solution takes shape as a software architecture for discrete internet based information channels with a common user interface, the suggested hardware device for which is a 7-inch touch panel device. The design of the interface is geared specifically toward older users, based on suggestions from the research of Anson and Jin et al.<sup>5-6</sup> **Results and discussion** This paper describes the iterative process through which the interface was designed, as well as four preliminary widgets that we have developed for this architecture--weather monitor, RSS reader, home status monitor, and streaming radio player--and the specific design challenges associated with each.

## References

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