

# Cultural User Interfaces

## A Silver Lining in Cultural Diversity

### Introduction

Many software applications marketed outside the country of origin are internationalised and/or localised. In this article, I propose a strategy to localise the software by creating a Cultural User Interface (CUI) for each of the target cultures. A CUI is a user interface that is intuitive to a particular culture. The CUI takes advantage of the shared or common knowledge of a culture which could be defined by country boundaries, language, cultural conventions, race, shared activities or workplace. An application that is CUI-enabled allows the use of many different CUIs. These different CUIs are developed collaboratively

with the target cultures, thus problems associated with localisation such as misinterpretation of elements in the CUIs, are unlikely to occur. A CUI can be used not only for one application but for a range of applications.

Most software developers have accepted the fact that it is worthwhile economically to internationalise their software. This trend is evident in the growing number of companies that provide internationalisation and translation services for software marketed outside the United States (US). Also, many resources are now available on internationalisation and localisation of software. These resources include books (Kano (1995), Fernandes (1995), O'Donnell (1994), Uren et al. (1993), Apple (1992b), Digital (1992), Madell et al. (1992), Taylor (1992), Nielsen, (1990)), mailing lists (INSOFT-L, intercultural.CHI), newsgroups (comp.software.international, comp.std.internat) and FAQs (ISO 8859-1 National Character Set FAQ,

Programming for Internationalization FAQ, Globalizing Applications for Windows FAQ). Some examples of current articles written on these topics include Yeo and Barbour (1996), Karat and Karat (1996), Belge (1995), Chris Miller (1994), Hall (1994), and Nakakoji (1994). CHI Workshops have also been conducted (Kellogg and Thomas, 1993). Presently, there is an even further need for internationalised software that allows the use of non-Romanised characters given the popularity of WWW (see <http://www.w3.org/pub/WWW/International/>).

Current internationalisation and localisation of software has mainly focused on modifications of the language/character sets, collating sequence, the date, time, number and currency formats. As pointed out by Russo and Boor (1993) and Marcus (1993) there are many aspects that need to be addressed. One of these aspects is making provisions for the different perceptions of the diverse cultures.

In this article, I discuss the differences in perception of user interface elements across cultures. A proposal and justification for many individually unique Cultural User Interfaces (CUIs) will be put forward. Lastly, technical implications of this proposal and a strategy to develop CUIs will be discussed.

### Different Perceptions

There are many factors that need to be addressed before a software package can be internationalised or localised. I have categorised these factors into overt and covert factors.

The overt factors are tangible, straight forward and publicly observable elements. The overt factors include date, calendars, weekends, day turnovers, time, telephone number and address formats, character sets, collating order sequence, reading and writing direction, punctuation, translation, units of measures and currency. Covert factors deal with the ele-

ments that are intangible and depend on culture or "special knowledge". Graphics/visuals, colours, functionality, sound, metaphors and mental models are covert factors. Much of the literature on internationalising software has advised caution in addressing covert factors such as using metaphors and graphics. This advice should be heeded to avoid misinterpretation of the meaning intended by the developers or inadvertently offending the target culture.

An example of misinterpretation is the use of the "trash can" icon in the Macintosh user interface. Thais might not recognise the American "trash can", because, in Thailand the "trash can" is actually a wicker basket (Sukaviriya and Moran, 1990). Some visuals are recognisable in another culture but they convey a totally different meaning. In the United States, the owl is a symbol of knowledge but in Central America, the owl is a symbol of witchcraft and black magic (Apple, 1992a). A black cat is considered bad luck in the US but good luck in the UK (del Galdo, 1990).

One culture may find certain covert elements innocuous but another may find the same elements offensive. In most English-speaking countries, images of the ring or OK hand gesture may be understandable, but in France the same gesture means "zero", "nothing" or "worthless". In some Mediterranean countries, the gesture implies a man is a homosexual (Pease, 1981). Covert factors will only work if the message intended in those covert factors is comprehended in the target culture. Before any software with covert factors are used, the software developers need to ensure the correct information is passed by validating these factors with the users in the target cultures.

### Cultures

In the examples given above, cultures appear to be associated with national boundaries. In this article, I take the following definition. Culture is defined as