Chapter 56
E-Business and Web Accessibility

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INTRODUCTION

E-business has developed due to the fast penetration of the Web to human activities ranging from work and education to news and entertainment. The power of the Web is in its universality, and, in principle, everyone can access e-business websites and benefit from available information, products and services. However, in practice, universal access to the Web - and subsequently e-business websites - is not merely an issue of availability or technical development.

Web accessibility emphasizes the incorporation of requirements of people with special needs to the design of Internet applications. Notwithstanding these requirements, the spectrum of accessibility concerns is even larger, for example if we think about the changing form of the computer and how people work and communicate: access is not required only from a PC, but also users are on the move and use other access devices (in terms of both hardware and software).

Research on Web accessibility has produced a wide range of results that are also used in mainstream Web design to promoted good design practice. These can be briefly outlined in terms of related legislation that aims at encouraging the development of accessible Web applications, open recommendations for accessible Web design, various accessibility evaluation tools that check – to some extend - the conformance of websites to the aforementioned specifications and various related open standards that promote accessibility.

Despite the large amount of work on Web accessibility, the vast majority of e-business websites are still not accessible. A report of accessible Internet shopping (Shindler, 2003) which involved 17 major high-street companies concluded that after the companies attempt to make their online shopping facilities accessible to people with disabilities during the period between August 2000 and June 2003 only

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five companies out of the seventeen examined, managed to pass the Watchfire Bobby test. The study of Loiacono and McCoy (2006) on evaluating Web accessibility in a large number of websites indicates that a poor 23% of federal homepages are accessible, while this percentage falls down to 11% for non-profit organisations and a totally disappointing 6% for corporate homepages.

The goals of the article are to:

- Argue for the importance of Web accessibility in e-business websites by reviewing related work and its impact at the technical, social, economic and legislative level and identifies typical accessibility problems of e-business websites;
- Propose measures for reaching and maintaining a good level of Web accessibility in terms of the specifications, design and evaluation phases of a user-centred approach to systems development. The proposed measures provide practical guidance to e-business applications stakeholders including managers, designers and developers.

PERSPECTIVES ON WEB ACCESSIBILITY

Accessibility has received several interpretations in related work. The W3C Web Accessibility Initiative (http://w3c.org/wai) defines Web accessibility as a set of "*strategies, guidelines and resources that make the Web accessible to people with disabilities*", highlighting that accessibility is not simply a technical development issue. The Wikipedia definition on accessibility reveals another dimension of the same coin: "*Web accessibility refers to the practice of making Web pages accessible to people using a wide range of user agent devices, not just standard web browsers. This is especially important for people with disabilities which require such devices to access the Web*". This perspective provides the dimension of good user-based design of the Web that supports different access contexts and multiple device operability with the Web. The Webaim initiative about Web accessibility (http://webaim.org) refers to accessibility noting that: "*(with the advent of the Web) ... at the click of a mouse, the world can be "at your fingertips"—that is, if you can use a mouse... and if you can see the screen... and if you can hear the audio.*" Many other definitions of Web accessibility can be found in related initiatives and literature, which fall under three diverse ends that are briefly outlined below:

- **Accessibility as technology and network effectiveness:** in its most basic sense, accessibility is considered as synonymous to the technical capability to access the Internet. Related metrics of accessibility in this respect are the characteristics of network connection and of the software applications used. This is obviously a limited interpretation of accessibility: the availability of technology does not guarantee that people will use it.
- **Accessibility as good Web content design and implementation practice:** accessibility promotes the syntactic understandability of Web content by multiple access devices (e.g. see Viorres et al, 2003), enables content transformation to other formats and media, and eases the task of customization of presentation to user needs and preferences.
- **Accessibility as advanced personalization of content and services:** this approach promotes the semantic understandability of information from users with varying profiles and cognitive requirements and allows for dynamic system responses to user actions.

A mainstream conception about designing for accessibility is that design projects usually result to constrained solutions addressing very specific