

INTERPRETING QUALITY FACTORS FOR THE WORLD WIDE WEB

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Abstract

As organisations become aware of the strategic importance of e-commerce they will also become aware of the need for quality Web sites. The factors that constitute software quality in traditional data processing are well defined. However, it is appropriate to investigate each of these factors and to interpret them in the context of Web sites. This investigation and interpretation establishes the sufficiency of these factors for the Web and identifies shortcomings in the traditional view of quality in the context of the Web.

Introduction

Software quality consists of a number of factors, which have been comprehensively listed by Fitzpatrick and Higgins (1998). Their listing includes seventeen factors in total. When interpreting these software quality factors it is essential to specify their context of use (Bevan and Macleod, 1994). For example, interpreting them for evaluating data processing systems is different to interpreting them for evaluating safety critical systems, which in turn is different to interpreting them for evaluating educational and information dispensing systems. Each interpretation has its own set of criteria. This paper interprets them for Web sites and is of interest to strategic managers and IS Professional.

Interpreting quality factors in the context of the World Wide Web

The investigation and critical analysis conducted by Fitzpatrick and Higgins (1998) addressed three influencing strands. The strands relate to software quality, statutory obligations and human-computer interaction. All three strands rely on well-respected sources, which include the European Council Directive on minimum safety and health requirements for work with display screen equipment, ISO/DIS 9241-10 (1993) and ISO 9000-3 (1997). The full set of factors is set out in Figure 1.

EXTERNAL QUALITY FACTORS		INTERNAL QUALITY FACTORS
<ul style="list-style-type: none">• suitability• installability• functionality• adaptability• ease-of-use• learnability	<ul style="list-style-type: none">• interoperability• reliability• safety• security• correctness• efficiency	<ul style="list-style-type: none">• maintainability• testability• flexibility• reusability• portability

Figure 1: *Software quality factors*

However, software quality factors need to be interpreted to suit the context-of-use of the software product (Bevan and Macleod, 1994). In this paper each of the seventeen factors in the set is fully interpreted in the context of the World Wide Web. The interpretation shows that traditional understanding of some of the factors maps almost directly to quality Web sites while other factors have to be clarified. For example, among those needing special clarification are learnability and maintainability and the paper addresses this clarification. The shortcomings of the quality factors are also identified. An analysis of these shortcomings indicates that there are other quality considerations, which also need to be addressed in relation to the World Wide Web. These shortcomings are addressed further in the next section and give rise to new factors for quality Web sites.

Shortcomings of quality factors in the context of Web sites

Web site quality research is not yet well established. Researchers addressing this issue include Stern (1995); Keeker (1997); Bevan (1998); Dreyfus (1998) and Nielsen (1998). Their work focuses mainly on usability issues (external quality factors). Their publications are focused on heuristics and lists of good practice relating to desirable usability features. However, Web site quality embraces much more than usability checklists. Additional quality issues, specific to the World Wide Web, include the ease with which users can find a site, user trust and confidence in the Web site owner and the extent to which knowledge is enhanced following a visit. Quality Web sites also need strategies for return-on-investment which include appeal, brand promotion, and which encourage visitor loyalty. These issues are not addressed by traditional quality factors and are the subject of on-going research.

Conclusion

This paper interprets a comprehensive set of software quality factors in the context of the World Wide Web. It clarifies context-of-use issues for the full range of factors based on those identified by Fitzpatrick and Higgins following their analysis of current international standards and EU law. This paper shows that in relation to Web sites there are a number of shortcomings in the set of factors addressed by these sources. Quality Web sites will be measured by how easy they are to find, visitor trust in the site content, knowledge transfer as a result of a site visit and on other organisational strategic considerations. Continued research is necessary in order to name these quality factors and to identify their sub-characteristics.

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