Chapter 15

Usability: Changes in the Field A Look at the System Quality Aspect of Changing Usability Practices

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System Usability is becoming increasingly important in situations where assistance in the operation of a system is not readily available for the user. Traditionally, usability measures have consisted of post development testing in a usability lab. Usability practitioners are recognising the need for innovative procedures to incorporate usability in system development at an earlier stage than traditional testing allows and User Centred Design is an approach that meets this need. The objective of this chapter is to examine traditional usability testing and compare it to user centred design practices focusing on the resultant quality of the information system. An examination of literature concerning the two approaches is presented and comparisons made to a case study of a large Australian organisation utilising both measures. The experiences of developers and users within the organisation are presented, and the perceived quality of systems developed using both approaches is examined.

INTRODUCTION

The quest for a quintessential definition for quality continues to challenge many researchers. Quality in Information Systems can be viewed from multiple perspectives. According to Eriksson and Torn (1991), from a technical perspective it can focus on

efficiency of systems and processing. From a business point of view, it can focus on an increase in profitability. From the users point of view, it can focus on increased ease of use in a system and support of their work practices. ISO 8402 (1994 - Quality Management and Quality Assurance) describes quality as the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

The objective of this chapter is to examine traditional usability testing and compare it to user centred design practices focusing on the resultant information system quality. In a comprehensive review of information systems literature, DeLone and McLean (1992) present such features as flexibility, usefulness and reliability as indicative of system quality. Many features that enhance the quality of a system are intangible and difficult to describe and measure, however it is these intangibles that draw the difference between the information quality of a system and traditional ideas of software quality. Many strategies have been developed to address these factors including a focus on system usability. Usability is defined in ISO 9241-11 (1998 - Guidance on Usability) as the "effectiveness, efficiency, and satisfaction with which specified users can achieve specified goals in particular environments." Traditionally, usability practices have involved testing in laboratory situations. As the area has developed, the need for new usability practices has arisen and techniques such as field studies, workshops, prototyping, and user centred design have emerged.

Information System Quality

In addressing information system quality in this context, I refer to the aspects of process improvement and use improvement. Process improvement, or process quality, refers to the view that improvements in a production process improve the quality of the final product, and the product relies on these processes. In examining usability practices, I will be discussing different approaches to the process of system development and the resultant quality of the system.

Use improvement from a quality point of view refers to the aspects of a system that make it more effective for use. Myers et al. (1997) describe an effective information system function as one which provides the appropriate information to assist users in performing their work. This is a direct reflection of the aims of usability practices as defined in ISO 9241-11. Reijonen and Kesti (1994) describe the usability of information systems as an indicator of system quality and state that the evaluation of the usability of a system has assisted in improving system quality at the interface level where users interact and obtain information.

Examining information system quality from a usability perspective involves a user-based view of quality. This is not to exclude other quality measures in a different situation. In this discussion, when referring to a system user, I am referring to the person who interacts with the system on a regular basis in the performance of their work. This

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