

User-Centred Evaluation of Complex IT&T within an Operational Environment

A J May

HUSAT Research Institute, Loughborough University
Elms Grove, Loughborough LE11 1RG UK
a.j.may@lboro.ac.uk

The aim of this paper is to provide guidance for the user-centred evaluation of new and complex Information Technology and Telecommunication systems within an industrial operational environment. This paper draws upon practical and methodological experience gained over a period of nearly a decade in order to:

- *Discuss the efficacy or otherwise of some typical Human Factors evaluation techniques*
- *Describe the common constraints that are likely to arise during an industrially-based evaluation process*
- *Provide guidance for overcoming these barriers to a successful and informative evaluation process*

Specifically, this paper aims to identify some of the key requirements for undertaking a successful evaluation process within a challenging environment and presents recommendations to maximise the efficacy of the evaluation effort.

Keywords: Evaluation, usability, user-centred design, human factors techniques, methodologies

1. INTRODUCTION

1.1 Evaluation within a complex, industrial, multi-user environment

User-centred evaluation is recognised as a vital constituent of any systems development process and according to Dix, Finlay, Abowd and Beale (1993), has three main goals: “to assess the extent of the system functionality, to assess the effect of the interface on the user, and to identify any specific problems with the system”. A wider view, which is that taken in this paper, is that ‘evaluation’ is the assessment of the actual properties of a system versus the desired properties, including the impact on the user, the organisation and the business. Since it is the staff within a business that enable the achievement of business objectives, Information Technology and Telecommunication (IT&T) must be designed to enable staff to work efficiently and effectively within business processes. User-centred design and evaluation of IT&T is therefore essential.

IT&T used within industrial or commercial environments are usually complex, multi-user systems, and there are many problems in attempting to evaluate them (Grudin, 1988; Ross, Ramage and Rogers, 1995; Thomas, 1996). Typical problems listed are:

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