Chapter 3
A Case Study of Usability Engineering in the Defence Industry

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ABSTRACT
The work discussed in this chapter is a case study of real application of usability engineering and Agile methods in the defence industry. The area of application is the monitoring of legal compliance to import and export of technology (ITAR). Manual compliance for an organization like BAE SYSTEMS presents serious challenges and is prone to errors, which can potentially lead to serious penalties. BAE decided to automate the compliance process using intranet technology with a time scale of three months. Several factors contributed to the successful development of the system and these include detailed but flexible planning, close and intense involvement of users and stakeholders and real time iteration of prototypes. The system is currently in use and while not without limitations, is seen as successful and provides a methodological framework for future similar work.

Good ideas are not adopted automatically they must be driven into practice with courageous patience -Admiral Hyman Rickover (1900-1986)

INTRODUCTION
The work described and discussed in this case study relates to how BAE SYSTEMS, a multinational defence company, applied usability engineering and web technology to address mission critical control
and monitoring arising from the International Trade in Arms Regulations (ITAR) imposed by the USA. The regulations require strict monitoring of the export of technology from the USA. The project does not involve new technology or methodologies but rather demonstrates how industrial organisations can take an eclectic approach to solving problems through the application of user centred design methods and web technology, resulting in novel and innovative solutions, demonstrating high degrees of usability and user satisfaction.

The work is often characterized by the pressures that frequently apply in industrial settings, where more principled and academic approaches are acknowledged but cannot be utilised fully due to impending deadlines and tight delivery schedules. It is not the intention of the authors to advocate an applied approach that “cuts corners” and rejects other approaches. Rather, we hope to show that it is possible to design and deliver effective and usable systems in an industrial context and which are guided in their design by more principled approaches and design methods. In the sections that follow we will outline the problems that faced the design team, the solutions adopted, the building of the system and finally the evaluation of the prototype. We finish with a discussion that places the project in a wider context. The focus of the discussion is on the design, task analysis and usability, but not on detailed implementation issues relating to the BAE SYSTEMS intranet.

BACKGROUND

What Is ITAR?

The International Trade in Arms Regulations (ITAR) relate to export controls, which are designed to protect items and information important to the interests of the United States. The regulations refer specifically to government controls that govern the transfer of the following to non-US entities or individuals, regardless of where or how the transfer takes place:

1. Goods (systems, components, equipment, or materials).
2. Technologies (technical data, information, or assistance).
3. Software/codes (commercial or custom).

In 1999 the International Arms Sales Code of Conduct Act enacted in the USA obliged the administration to establish an international regime to ensure global transparency with regards to arms transfers. In December 2000 the EU and the United States issued a “Declaration by the European Union and the United States on the Responsibilities of States and on Transparency Regarding Arms Exports (www.basicint.org/WT/armsexp/USeUCoop.htm 23.05.09). Since 9/11 the nature of the international security environment has changed markedly, with implications for the relative weight applied to export control criteria and perceived foreign-policy imperatives in arms export licensing decisions. At the same time, governments and their export licensing authorities are having to confront rapid consolidation of the defence industry, both within and across borders. Traditional anti-proliferation concerns have been challenged by arguments for streamlining export licensing processes for transfers to economic, as well as strategic allies.

Within these relatively wide categories it is often not obvious what is export sensitive, and therefore, impacted by export controls. Export controls serve multiple purposes - from guarding US national security, to protecting the US economy, to supporting US foreign policy. As a result, different government agencies have different rules and lists, specifying what may be considered export sensitive, or where export controls apply. Furthermore, these rules and lists are updated frequently, and in a given situation any, or none, may apply. This obviously invites potential confusion and complexity for organisations involved in the defence trade. Most
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