Abstract. In order to be successful, web-based electronic business systems have to be developed in such a way that both the customers’ needs and the business intentions of the provider are met. As human-to-human interaction is partly replaced by human-computer interaction in such systems, this requires anticipating the users’ behaviour and paying a lot of attention to the communication aspects.

In this article a development method is suggested that emphasizes the communication aspects in web-based systems. It is based on user profiling and story boarding. User profiles can be used to classify user needs as well as the various kinds of system support for them. The story board describes stories, i.e. navigation paths of users through the system, which can be used to model the behaviour of users.

To discover user profiles and stories, two interleaved activities are suggested: communication analysis and linguistic analysis. Communication analysis addresses typical human-to-human interaction in the application domain and classifies typical communication barriers. We argue that using localisation abstraction and metaphors can help to overcome communication barriers, implying that their use may enhance the users’ understanding and successful navigation through a web site. Linguistic analysis addresses how the activities of the users would be described in natural language. Analysing the used word fields and metaphorical structures may provide guidance for centering the story board around the central activities. We use a typical banking application, on-line loan systems, as an example to illustrate our method.

Key words: communication, e-business, success factors, user profile, story boarding, communication barriers, localisation abstraction, metaphor, word field
1 Introduction

Web-based electronic business systems are developed to improve and extend a company’s business. Some of the expectations are cost reduction, attracting new customers, and opening new business channels. Such expectations can only be met if the system is accepted by a large range of various users. Acceptance and use by customers is also important in that some customers dissatisfied by the offered system might be lost to the business, as they are expected to be able to find an alternative that suits them better.

Thus, in order to be successful, web-based electronic business systems have to be developed in such a way that both the customers’ needs and the business intentions of the provider are met. As human-to-human interaction is partly replaced by human-computer interaction in such systems, this requires anticipating the users’ behaviour and paying a lot of attention to the communication aspects. This is also supported by a pilot study in (Wallace 2002), which analysed the ways organisations were using the Internet for their various business functions. The analysis showed that those factors that have the greatest impact on an organisation’s successful Internet use are more strongly related to the human factors rather than the technical aspects. A closer examination revealed that they were in fact more specifically concerned with communication and customer service. This implies that for an organisation the communication aspects of web-based electronic business systems are key for the systems’ success.

The goal of this article is to provide parts of a methodology for the development of web-based electronic business systems that emphasises the communication aspects. First we focus on the conceptual modelling aspect of describing the users’ behaviour. This requires anticipating the usage of the system. Our rationale is that we can describe a system on a rather abstract level adapting terminology from movie production. That is, we use actions and scenes, in which these actions appear. The actions correspond to actors in different roles, which are described by a profile, intentions, rights and obligations. The work in (Schewe and Thalheim 2004) contains a much more formal treatment of this subject.

Thus, a reasonable approach will be to identify user types and the most likely behaviour patterns associated with these types. User types can be characterized by the users’ goals and intentions, their application domain knowledge, their information technology abilities, etc. We refer to user type identification by the term user profiling\(^1\). We use story boarding as a technique for user behaviour pattern analysis. The story board describes the way users will navigate through a system, which (optional) information they will look at, which level of detail they like to see for this information, etc. We describe the more technical means around user profiling and story boarding in Sect. 3, without going too much into formal details. The work in (Schewe and Thalheim 2004) contains a much more formal treatment focussing on

\(^1\) Recent interviews with companies in Australia and New Zealand show that user profiling already is used in practice, but companies treat the profiles they use as strategic intellectual property.