



The implementation of enterprise resource planning packages in different organisational and national cultures

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Abstract

Enterprise resource planning (ERP) packages provide generic off-the-shelf business and software solutions to customers. However, these packages are implemented in companies with different organisational and national cultures, and there is growing evidence that failure to adapt ERP packages to fit these cultures leads to projects that are expensive and late. This paper describes research that synthesises social science theories of culture to handle the impact of culture on ERP package implementation more efficiently. It describes a knowledge meta-schema for modelling the surface and the deeper manifestations of culture. It reports an empirical study into the implementation of SAP R/3's sales and distribution (SD) module in a large pharmaceuticals organisation in Scandinavia and the UK. Results provide evidence for an association between organisational culture and ERP implementation problems but no direct evidence for an association between national culture and implementation problems. Furthermore, results demonstrate that these diverse implementation problems can be caused by a mismatch between a small set of core values indicative of a customer's organisational culture. At the end of the paper, our predictions are reviewed, conclusions are made about them and about the work of the key authors of national and organisational culture, and future work is discussed. © 2001 Elsevier Science Ltd. All rights reserved.

Keywords: ERP packages; National culture; Organisational culture; Values; Beliefs; Norms

1. The impact of culture on ERP implementation

Enterprise resource planning (ERP) software packages are an essential part of enterprise-wide information systems. An ERP package, such as SAP's R/3, is a large off-the-shelf software solution which provides integrated business and software systems to a customer. Unlike the traditional software development approach, which

promotes building systems from scratch, ERP packages encapsulate reusable best business processes and software. Customers purchase the package then configure their business processes and software systems to meet their requirements. At the end of 1997, Business Week estimated the value of the ERP market at \$10 UK billion and growing. Indeed, ERP packages are a significant part of a total software package market set to surge ahead with total licence revenues growing from \$8.5 UK bn worldwide in 1998 to \$20.8 UK bn in 2003, and predictions that over 60% of Europe's business solutions will be developed from packages by 2003 (source: Forrester research).

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However, a recent Standish Group report on ERP implementation projects reveals that these projects were, on average, 178% over budget, took 2.5 times as long as intended and delivered only 30% of promised benefit. A survey of 12 recent projects revealed that adapting the implementation to the prevailing cultural style was one important cause of this project under-performance [1]. This importance of culture is hardly surprising. A customer who implements an ERP package has to change its business processes to the ERP supplier's best-practice processes [2]. The change both impacts on the customer's organisational culture (i.e. the ways that things are done in the organisation) and is constrained by it. In Europe, the picture is even more complex because companies also have diverse national cultures which influence this organisational culture and make the successful implementation of multi-national ERP solutions difficult. A recent such ERP implementation encountered major problems due to differences between the different participating national partners [3]. Indeed, evidence suggests that ERP implementations in North America have been more effective because of the more complex European organisational and national cultures [4]. If ERP implementations are to deliver their promised benefits within budget, we need to understand how organisational and national culture impact on ERP implementations, and how this understanding will deliver better methods for implementation partners and customers to use.

In contrast to the lack of research in computer science, social and system science has researched the influence of organisational and national culture on organisational behaviour. Unfortunately, this research does not address issues that are specific to information systems development, nor does it have a tradition of model-theoretic approaches which are familiar in information systems research to describe and predict problems and their solutions. If we are to implement ERP solutions which recognise organisational and national cultures, we need at least to model elements of culture in order to describe and to predict its impact on an ERP implementation. This is the focus of a current research programme based

in the Centre for HCI Design and supported by the world's largest ERP vendor SAP.

This paper draws on social and management science research into national and organisational culture to make two predictions about the impact of culture on ERP implementations:

- P1: Different national and organisational cultures are associated with problems during ERP implementations.
- P2: Elements of culture as defined by our theory of culture are associated with problems during ERP implementations in different ways.

Furthermore, previous studies of current ERP implementations [5] have identified 3 different types of culture-related clashes that, this paper predicts, might influence ERP implementations as shown in Fig. 1. During an ERP implementation process there will be 4 different models of the organisation's culture, processes and software systems: (i) the ASIS model, which describes the organisation's current culture, processes and software; (ii) the TOBE model, which describes the required culture, processes and software; (iii) the ERP model, which describes the ERP supplier's processes, software and culture and (iv) the MIGHTBE model, which describes how future processes and software will operate in the current culture.

Using these three types of culture-related clash as a starting point, we make one further prediction about problems that can arise during ERP implementations:

- P3: The supplier's culture evidenced in characteristics of the ERP package, clashes with the customer's organisational culture;

The first objective of the studies reported in this paper is to detect evidence of the influence of culture on ERP implementations rather than to use management and social science theories to predict specific culture-related problems. As this influence is not yet shown and remains uncertain, it needs to be validated first before we investigate management and social science theories to make predictions about possible culture-related problems in ERP implementations.

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