

Chapter 3

Knowledge–Based Diffusion in Practice: A Case Study Experience

Hilary Berger

University of Wales Institute Cardiff, UK

Paul Beynon-Davies

Cardiff University, UK

ABSTRACT

This chapter uses a case study to consider how development methods shape information systems practice and how organizations adapt, deploy, and use such knowledge in situ. The authors explore how an information system development method (ISDM) acting as a de-contextualized “knowledge bundle” is diffused and infused within an organization through the process of contextualization. The case study looks at a regional government project responsible for the distribution of European Community (EC) monies through agricultural grants and subsidies. A new IT/IS system was designed and developed to improve the administration and management of the EC’s agricultural policy across the region. A longitudinal research project was conducted over three years and was situated within the project environment. It involved a sustained period of fieldwork (nine months of intensive observations), and data was collected through 126 semi-structured interviews, shadowing of key participants, and informal discussions and conversations. Secondary data involved an in-depth and systematic analysis of published literature, project documentation, and artifacts. The authors consider how the structure and culture of organizations affect implementation and processes of diffusion and infusion.

INTRODUCTION

Our discussion is grounded in case material collected as part of an ethnographic study of a large-scale information system development project. Within this project an agile development

method promoted by external vendors initially experienced problems in deployment amongst organizational actors. Over time however the development method was adapted and used successfully by project participants. We consider how and why this transformation occurred. The main findings are that the success of ISDMs is influenced by the inherent structure and culture

DOI: 10.4018/978-1-60566-701-0.ch003

of the host organization, the actors involved and the IS development activities. The ISDM adopted was clearly tempered by the relationship between the development approach and the nature of the organization, although the attitudes and behaviors inherent in the organization hindered the diffusion process. Thus, knowledge management crucial to the adoption or rejection of technology is subjective and can be influenced by the various actors involved and the related social system and environment have a significant impact upon the unfolding ISDM process. The lesson here for knowledge based diffusion is that the presence of inherent antecedents and characteristics that present areas of risk may be mitigated through a cultural acclimatization of both the environment and of key stakeholders involved.

It is important to acknowledge some of the fundamental principles and practices for knowledge diffusion relative to the work place. Knowledge diffusion is the adaptation of knowledge across a broad range of business contexts, and it allows for the communication of ideas. It is the process of knowledge diffusion that enables the right information to be disseminated to the right person at the right time. Knowledge can be diffused through a diversity of mechanisms (dialogue, discussion, manual or electronic method) and is broadly categorized as implicit [i.e. can be readily gathered], explicit [i.e. documented] and tacit [i.e. individual 'know-how' gained through experience]. Decision-making requires a relevant blend of these knowledge types. However the diffusion of knowledge depends on the interpretation and communication by the various stakeholders involved. It requires understanding and effort that does not result in a loss of meaning or validation of the knowledge itself (Martinez-Brawley & Emilia, 1994). Although humans as social animals may transfer knowledge, whether new or old, through their social interactions within the work place, both IT and IS and the development of information system play an important role in the diffusion process.

Information system development methods (ISDMs) specify an approach for developing an Information Technology System within its larger Information System. Typically, an ISDM encompasses a model of the ISD process, a set of development techniques, a documentation method, a perception of how these would fit into the development process and a philosophy of assumptions about what constitutes information, an IS and the place of IS within organizations (Beynon-Davies, 2002). They play a central role in the creation, adaptation and renewal of an organizations' IS infrastructure. Thus strategically they have a significant affect on an organizations performance (Beynon-Davies & Williams, 2003). The current turbulent business environment combined with the continual growth, the rapid change, the dynamic nature, and the increasing complexity of organizational knowledge reflects a need for new types of efficiency based on adaptability and innovativeness (Clarke & Staunton, 1989; Hollingsworth, 1991). The implementation of an ISDM can be regarded as an instance of both technological as well as an organizational innovation (Veryard 1987). The diffusion of ISDMs is a key example of knowledge-based diffusion (Newell *et al.*, 2000; Beynon-Davies & Williams, 2003).

In the knowledge-based perspective, an ISDM is considered as a de-contextualized 'knowledge bundle' that needs to be contextualized and unbundled such that it becomes relevant to an organizations own rationale. ISDMs are typically perceived by practitioners as packets representing 'best practice' (Beynon-Davies & Williams, 2003). However, literature suggests that organizations rarely implement an ISDM as specified. In some cases no specific ISDM is used at all. However practitioners often utilize existing ISDMs by adapting development practices to respond to the exigencies and situational requirements of the particular organization, and the specific IS/IT development project they are concerned with (Button & Sharrock 1993; Mustonen-Ollila *et al.*, 2004). This may prove problematic for a number of

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/knowledge-based-diffusion-practice/47220

Related Content

E-Democracy: The Social Software Perspective

Pascal Francq (2009). *Knowledge Networks: The Social Software Perspective* (pp. 61-73).

www.irma-international.org/chapter/democracy-social-software-perspective/25446

Foot-Printing E-Learners' Activity: A First Step to Help their Appropriation of the Training System?

Magali Ollagnier-Beldame (2012). *Conceptual Models and Outcomes of Advancing Knowledge Management: New Technologies* (pp. 230-243).

www.irma-international.org/chapter/foot-printing-learners-activity/62425

A Framework for Implementing a Computer-Based Knowledge Management System in Healthcare Organisations

George Marambaand Hanlie Smuts (2022). *International Journal of Knowledge Management* (pp. 1-30).

www.irma-international.org/article/a-framework-for-implementing-a-computer-based-knowledge-management-system-in-healthcare-organisations/313640

Competitive Intelligence Gathering

Kevin R. Parkerand Philip S. Nitse (2011). *Encyclopedia of Knowledge Management, Second Edition* (pp. 103-111).

www.irma-international.org/chapter/competitive-intelligence-gathering/48962

Effect of Knowledge Sharing and Supply Chain Management on Organizational Performance

Korhan Arun (2015). *International Journal of Knowledge-Based Organizations* (pp. 19-32).

www.irma-international.org/article/effect-of-knowledge-sharing-and-supply-chain-management-on-organizational-performance/129072