

Chapter 10

Towards a Social-Based Process for Information System Development: A Case Study

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Abstract

The role played by the computer in organizations continues to evolve and increases in importance, since it mediates social relationships. To improve the information system (IS) development process we need a better understanding of the organizations and their internal and external interactions and dynamics. This chapter aims at discussing a semiotic-based approach to the development of IS. The proposed approach is illustrated with a case study in which a real organization was exposed to methods of organizational semiotics (OS) to rethink its way of developing systems. This work has allowed us to verify the contributions of OS to the redesign of an IS development process in an IT organization.

10.1 Introduction

Rethinking an organization is one way to improve business performance, understanding what it is doing now, identifying the essential activities to be performed, the stable organizational behaviour, and the changeable activities, normally related to message and control activities [8]. This process allows the organization to focus on the changeable part, to find how to perform it in order to improve effectiveness.

The result of this approach can change the organization or its business process in several ways, including simplification and improvement of its

processes, redesign or re-engineering of the business process, redesigning of the business scope, or a corporate transformation [1].

In a contemporary society the role played by software has increased in importance, but it remains a difficult issue “simply summarized as software taking too long to develop, costing too much, and not working very well when eventually delivered” [5, p. 65]. The same authors suggest that “a disciplined approach to software development through the use of software development methods could help address these problems”, and despite the existence of “hundreds of such commercial or brand-named software development methods, these are not widely used in practice, and are certainly not used in their entirety”. They consider that the use of methods should be flexible and tailored to the actual needs of the development context.

The role played by the computer is very important, because it mediates social relationships [1]. “When re-engineering we must understand that we are re-engineering a social system and not a deterministic mechanical process” [1, p. 4]. Moreover, to improve effectiveness in an organization it is necessary to involve not only questions related to costs, quality, and services, but also related to effective cooperation of the organization’s resources and its partners (e.g. suppliers, clients, and government). These are not questions to be easily addressed in traditional development processes [10].

Many authors have shown the significant role of social and organizational aspects in our interactions with technology [3, 6, 9, 10, and 16], and the influence of these aspects must be taken into account in the analysis and the design of systems. Literature in organizational semiotics (OS) has shown that the social, cultural, and organizational aspects involved in the problem must have a more decisive role in the process of developing IS, while traditional methods have emphasized the technological solution itself. The main assumption behind the first approaches to the development of the technical information system (IS and the traditional methods from software engineering (SE) can be characterized by a strong belief in systematic design methods based on mathematical and logical theories, suggesting that the users (end-user, client, customer, stakeholder, or problem owner) are supposed to give complete and explicit descriptions of their demands in terms of the system to be developed [4, 7, 10, 12, 15].

The better of the two worlds seems to be necessary to a broader understanding of the problem of developing IS that make sense to their users in their organizational contexts. “Organizational change belongs to the social science ..., and we cannot simply use the methods in the natural science to observe and judge the results of social science” [10, p. 5]. Our previous work investigated the use of the OS methods in a combined way with the unified process (UP), to compose a complete cycle of IS development. We have been practising OS and UP techniques together [2, 14], as well as OS