

# Chapter VIII

## Research Directions on Incorporating Work System Method Ideas in Systems Analysis and Design

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### ABSTRACT

*In this chapter, the authors analyze recent developments linking design science to systems analysis and design research and the growing area of the work system method proposed by Steven Alter. As a result, possible directions in a research agenda related to the incorporation of work system method ideas in systems analysis and design are provided. These follow the conceptual framework for IS research developed in 2004 by Hevner, March, Park and Ram.*

### INTRODUCTION

Due to the multi-disciplinary nature of the information systems (IS) field, there has been a long debate (e.g. see Lee, 2000, Orlikowski and Iacono,

2001, Hirschheim and Klein, 2003) about its core knowledge and scope. Hirschheim and Klein (2003) present a multidimensional analysis of the state of the IS discipline. Their chapter points at the richness of information systems develop-

ment as a field for exploration by IS researchers. Related issues are explored in Iivari, Hirschheim and Klein (2004). Lee (2000) suggested the idea of practicing **design science** as a potential direction for revival of the IS discipline. Hevner et al (2004) presented seminal directions for work in design science in IS research. These lead subsequently to an increased interest in research in **Systems Analysis and Design** (SA&D) (see Bajaj et al., 2005; Iivari et al., 2005; Harris et al., 2006). The importance of Systems Analysis and Design for any program of study in information systems is well summarized by Harris et al. (2006:242). Among the most important aspects of the relevance of SA&D they list the development of analytical and problem solving skills and the development and implementation of information systems (see Harris et al., 2006).

The growing interest in SA&D was evolving in parallel with a renewed interest in the applicability of systems thinking to Information Systems as a discipline (see Alter, 1999, Alter, 2004; Mora et al., 2007, Mora et al., 2008). Throughout these developments the ideas of Steven Alter on the **work system method** played persistently an important role (e.g. see Alter and Browne, 2005, Alter, 2006c). The work system method has emerged over the last decade as a theory for understanding the role of information systems in organizations and is gaining popularity among IS researchers (see Alter, 2006c; Korpela et al., 2004; Siau et al., 2004; Petkov and Petkova, 2008). In spite of that, we feel that there is a need for more work on the diffusion of work system method ideas in Systems Analysis and Design. This is the motivation for the work presented here.

We suggest here possible research directions for incorporating work system method related ideas in Systems Analysis and Design. These are an extension of the research by Alter and Browne (2005) and Alter (2006c) and they are in line with the recent revival of research in that area as advocated in Bajaj et al (2005). The chapter proceeds with an overview of the work system

method (WSM) and related research, a review of recent work in systems analysis and design as well as design science, which are followed by the proposed directions for future work on applying WSM in SA&D followed by a conclusion.

## **THE WORK SYSTEM METHOD AND RELATED RESEARCH**

The work system method is one of the two existing theoretical frameworks to support teaching of information systems at present. The other approach to introduce the IS field (used predominantly with MBA students) is the IS Interaction Model which focuses on the relationships between IS, their environment and the organization (see Silver et al. (1995). The Work System Method (Alter, 2006c), however, can be used both for IS teaching and research. That distinguishes it from the Interaction Model and makes it suitable for exploring its role in systems analysis. The work system method is an approach for understanding and analyzing systems in organizations including Information Systems (Alter, 2002). Petkov and Petkova (2008) published the results from a controlled experiment showing that it helped students in an introductory IS course to understand better an IS implementation problem.

### **The Work System Method**

The work system method provides a rigorous but non-technical approach to any manager or business professional to visualize and analyze systems related problems and opportunities (Alter, 2006a). A very detailed justification for the work system method and how to apply it to define a work system, analyze it, formulate recommendations for improvement and guide its evolution is presented in Alter (2006c). The work system method (Alter, 2006c) has two major components: the work system framework, representing a static description of the work system and the work sys-

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