Chapter 1

A Meta-Analysis of the Direction and State of Sociotechnical Research in a Range of Disciplines: For Practitioners and Academics

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ABSTRACT

This is the first in a series of articles providing a meta-analysis of journal articles using sociotechnical approaches as a dominant theme. In this article we look at the article repository Business Source Complete and two specific search terms: sociotechnology and sociotechnical, to extract relevant papers from 1968 onwards. We identify trends in publishing relevant articles which appear to show a revival of interest from the 1990s to date. It appears that this revival has been prompted by the expansion of large work systems and their frequent partial or complete failures which limit their usability in organisations. Using Content Analysis we have analysed 42 papers that discuss sociotechnical theory and its development and have found that the fields of application of the theory have shifted from human resources; to work design and operations management; to most recently, knowledge management and philosophy.

INTRODUCTION

This article is the first of a series looking at trends in sociotechnical publishing. Our overall aim is to provide a meta-analysis of academic ideas as demonstrated by their output in journals, books and published book reviews. We draw on the published work from 1968 to April 2008 to highlight the major areas of concern; the research domains; the theories and frameworks utilised in research; the social and technological emphasis; the underpinning understanding of sociotechnol-
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ogy demonstrated; the journals most favoured for publication; and the most prolific authors within certain fields of expertise.

This article is drawn from searches conducted on Business Source Complete (BSC), the largest international database of academic publications (10,000 journals) available within the UK, looking at the spelling variants sociotechnology and sociotechnical. The second article in this series will look also at BSC, but at the other possible spelling variants including socio-technology and socio-technical. The reason for splitting this search in two is the large numbers of articles under consideration. Additionally, we will draw on the analysis of this first article to assist in developing the analysis of the further articles. The third article will therefore be able to look at all four spelling variants in the Web of Science database (which concentrates on scientific publishing and in which many computer journals are extracted). The fourth and final article will consider only US published work as exemplified by articles in books and journals from IGI-Global publications and its imprints. IGI-Global is one of the largest publishers of academic and scholarly texts in the USA.

In this article we start by discussing what the various authors and authorities consider sociotechnology to be, firstly from key authors, and then from the general, as demonstrated by a Google search undertaken during April and May 2008. A short history of sociotechnical thinking and its development is followed by a comparison with the use of the term in its various spellings (sociotechnical, socio-technical; sociotechnology, socio-technology; and occasionally SocioTechnology) in the retrieved abstracts, and the key words associated with it by both BSC and the actual articles. We then describe the search methodology and identify the research questions. The next section of this article contains our findings and discussion related to the BSC search and to a review of articles published relating to the theory of sociotechnology. Finally we draw our conclusions and indicate future research requirements.

WHAT DO PEOPLE MEAN BY THE TERM SOCIOTEchnICAL/ SOCIO-TECHNICAL?

Some Definitions

To add to our discussion below we have also utilised previously published work by the authors on sociotechnical thinking. In Coakes and Coakes (2005 p281) we said:

Sociotechnical thinking is important to the design, development, implementation, and use of information technology systems in organisations. It addresses vital issues in combining the use of powerful information and communication technologies with effective and humanistic use of people. Sociotechnical concepts are recognized by many academics and practitioners as vital to the design and use of work systems in organisations...... Sociotechnical thinking is a part of social theory and of philosophy. Its original emphasis was on organisational design and change management.

Munkvold (2000) p14) said:

the importance of mutual alignment of the social and technical systems in organisations, structuring of work in self-autonomous teams and participation of stakeholder groups in change activities is well acknowledged... socio-technical principles can be seen as a foundation for much of the current practice related to organisational change and information systems development.

In the same book Enid Mumford, one of the best known practitioners of sociotechnical design for information systems highlighted the need to understand what is meant by the term technology in the sociotechnical domain. She said:

Technology can be described as both an artefact and a process. It consists of tools that help men and women extend their abilities and knowledge, but it is also the generic knowledge and skill required to design a specific product or process (p30).
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