

Chapter 1.39

Uncertainty and Information in Construction: From the Socio-Technical Perspective 1962–1966 to Knowledge Management — What Have We Learned?

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ABSTRACT

This chapter questions the possibility of knowledge management in construction, other than among leading organisations handling a restricted population of projects. Socio-technical research in UK coal mining from the 1950s and construction from the 1960s and other relevant studies are compared. The extent to which the tacit order, instability, and diffuseness of construction may, practically, undermine knowledge management is explored. Knowledge management is compared to other methods in terms of the stability required for it to be effective. It is demonstrated that this stability is not usually available in construction, whose projects and processes are subject to an unusually wide range of disturbances.

INTRODUCTION

This book offers a socio-technical perspective on knowledge management in construction. This chapter discusses the original socio-technical research on construction, the Building Industry Communications Research Project (BICRP) by the Tavistock Institute of Human Relations (TIHR) from 1962–1966 (Boyd & Wild, 2003; Wild, 2004). Located between TIHR studies of UK coal mining and concepts of contextual turbulence in 1965, BICRP archives and publications demonstrate the state of construction, revealing the tacit order as deeper and wider than assumed. Problems of information, uncertainty, and indeterminacy pushed socio-technical ideas to their limit.

The knowledge management discourse assumes accessibility of the tacit order through

structured inquiry. Are the categories of sense making; communications; information management; intellectual property and capital; innovation, communities of practice, and knowledge capture through IT latent within TIHR ideas? As a then leading analysis for re-framing managerial practice, these compare to knowledge management, which may also reach the limits of analytical penetration in the tacit order of construction. The chapter discusses TIHR work; 1960s studies of organisation; reflective practice and knowledge management, and uncertainty and information in the tacit order of construction and mining.

LEARNING OBJECTIVES

By the end of this chapter, readers will

1. appreciate the intrinsic instability of construction projects and
2. appreciate the effects of this instability on 'methods of management'.

TAVISTOCK (TIHR) STUDIES OF MINING: KNOWLEDGE AND LEARNING; RECURSIVENESS AND REFLEXIVITY IN A TRADITIONAL WORKING CLASS COMMUNITY OF PRACTICE

TIHR studies of mining are organisation theory classics. In the transition to the 'long-wall method', the responsible autonomy of the previous craft mining process was lost. This aligned methods, organisational and legal constraints within the face-to-face, self-managing workgroup; its context of time, space, and darkness; the absence of intermediate management and the moral intensity of the community, which buffered the operational core of collieries, and stabilised the 'organisational ground'. Long-wall technology

never realised its production engineering potential. It required an organised, large working group to match the "...structure of the long face and the shift sequence...(creating) difficulties of communication and working relationships...the scale...of the task transcend(ed) the limits of simple spatio-temporal structure..." completion of a job in one place at one time. Engineering difficulties exacerbated the differentiation and interdependence of the workforce. Production required "...one hundred percent performance at each step...working to some extent against the threat of its own breakdown..." creating a tendency to crisis management. Stability implied "...a common skill of a higher order than that required...to carry out, as such, any of the operations belonging to the production cycle..." (Trist & Bamforth, 1951).

Adaptation of the craft system, assisted by the sociologically bounded community and stable political support, created the 'composite long-wall'. This early example of 'learning organisation' and 'community of practice' recorded improved efficiency, safety, and welfare (Trist, Higgin, Murray, & Pollock, 1963). The composite long-wall method was developed from the tacit and local knowledge of the pits without knowledge managers (Heller, 1993).

"At the time the long-wall method developed, there were no precedents for the adaptive underground application of a machine technology. In the absence of relevant experience in the mining tradition, it was...inevitable that...culture borrowing...should have taken place. There was also no psychological or sociological knowledge in existence at that time which might have assisted in lessening the difficulties." (Trist & Bamforth, 1951)

The 'composite long-wall system' resolved tensions between uncertainty and norms of rationality (Thompson, 1967). Consensus in the

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