

Chapter 21

Strategic Ethnography and the Biography of Artefacts

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ABSTRACT

In health research and services, and in many other domains, the authors note the emergence of large-scale information systems intended for long-term use with multiple users and uses. These e-infrastructures are becoming more widespread and pervasive and, by enabling effective sharing of information and coordination of activities between diverse, dispersed groups, are expected to transform knowledge-based work. Social scientists have sought to analyse the significance of these systems and the processes by which they are created. Much current attention has been drawn to the often-problematic experience of those attempting to establish them. By contrast, this chapter is inspired by concerns about the theoretical and methodological weakness of many studies of technology and work organisation—particularly the dominance of relatively short-term, often single site studies of technology implementation. These weaknesses are particularly acute in relation to the analysis of infrastructural technologies. The authors explore the relevance to such analysis of recent developments in what they call the Biography of Artefacts (BoA) perspective—which emphasises the value of strategic ethnography: theoretically-informed, multi-site, and longitudinal studies. They seek to draw insights from a programme of empirical research into the long-term evolution of corporate e-infrastructures (reflected in current Enterprise Resource Planning systems) and review some new conceptual tools arising from recent research into e-Infrastructures (e-Is). These are particularly relevant to understanding the current and ongoing difficulties encountered in attempts to develop large-scale Health Infrastructures.

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INTRODUCTION

Various writers have drawn attention to the increasing scope and scale of information systems (focusing particularly on their longevity, ever-wider application, and implications for various kinds of work). The facility that these systems offer for sharing information across the boundaries between occupational and organisational groups has been seen as transforming scientific research and knowledge-based work and services more generally. The concept of ‘infrastructure’ has been applied to the structures of codified information (Star & Ruhleder, 1996), and *qua* information infrastructure also to the hardware, networks and software systems via which they are increasingly stored and accessed (Monteiro & Hanseth, 1995; Hanseth, et al., 1996). The application to scientific research of powerful new computer-based tools such as ‘the Grid’ (in such areas as Translational research and genetic health databases) has been associated with the term e-infrastructure, e-Research or e-Science, or in the USA cyberinfrastructure (Edwards, et al., 2009)¹. The need for such systems to cater for a wide range of current users and uses (and, given their development costs and intended longevity, potential future users and uses) makes their design and further evolution potentially challenging.

Social scientists have been drawn to address the emergence, use, and evolution of these systems—particularly in the areas of health research and health service delivery, where enormous investments have been made in the last decade, but where acute problems have also been encountered in both development and maintenance. This paper questions whether or not scholars have adequate social scientific tools for getting to grips with e-Infrastructures. It argues that we need more elaborate methodological templates and conceptual frameworks for analysing both the dynamics and the constraints surrounding these developments, for characterising the problems and factors that underpin them, and identifying how

these problems may be ameliorated such that we can guide policy and practice.

The starting point for this paper is our dissatisfaction with some of the dominant analytical traditions on technology and work organisation, where we have identified shortcomings that are particularly relevant to enquiries into e-infrastructures. We have begun to develop the Biography of Artefacts (BoA) perspective to redress these theoretical and methodological weaknesses and provide more effective analytical templates to guide research and perhaps intervention.

SOME SHORTCOMINGS OF EXISTING RESEARCH INTO TECHNOLOGY AND WORK ORGANIZATION

Research into technology and work organisation has suffered from the fragmentation of enquiry between various disciplines and schools of analysis—with their differing foci and concerns—and which have tended to be associated with different kinds of study. We draw attention particularly to the divide between a relatively small cohort of researchers (mainly from Science and Technology Studies [STS] but also from Information Systems, etc.) who have undertaken studies that encompass technology design and development (Mackay, et al., 2000) and a much larger group which has focussed more narrowly on their organisational implementation and use. Here we find a substantial body of work informed by diverse perspectives within Management Schools—including Organisation Studies, Technology Management, and Strategic Management—as well as Information Systems Research and Science and Technology Studies and what we may describe as socially-oriented computer-science, including Social Informatics and Computer Supported Cooperative Work (CSCW). Studies of organisational adoption constitute the overwhelming bulk of contemporary research into enterprise systems and

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