

The Foundation Role for Theories of Agency in Understanding Information Systems Design

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Abstract

In this paper we argue that theories of agency form a foundation upon which we can build a deeper understanding of information systems design. We do so by firstly recognising that information systems are part of purposeful sociotechnical systems and that consequently we need to understand them. We then present two alternative theories of agency (deliberative and situational), mainly drawn from the robotics and artificial intelligence disciplines, and in doing so, we note that existing information system design methods and ontological studies of those methods are based on a theory of agency. We also note that while there are advantages in specific circumstances from utilising the situated theory of agency in designing complex systems, because of their differing ontological commitments, such systems would be difficult to analyse and evaluate using existing methods. We then provide evidence that such situational information systems can indeed exist, by giving a specific example (the Kanban system), which has emerged from manufacturing practice. We conclude that information systems are likely to benefit from creating design methods based on theories of agency.

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