Innovation in construction: a sociology of technology approach

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An alternative approach to understanding innovation is made using two intersecting ideas. The first is that successful innovation requires consideration of the social and organizational contexts in which it is located. The complex context of construction work is characterized by inter-organizational collaboration, a project-based approach and power distributed amongst collaborating organizations. The second is that innovations can be divided into two modes: 'bounded', where the implications of innovation are restricted within a single, coherent sphere of influence, and 'unbounded', where the effects of implementation spill over beyond this. Bounded innovations are adequately explained within the construction literature. However, less discussed are unbounded innovations, where many firms’ collaboration is required for successful implementation, even though many innovations can be considered unbounded within construction’s inter-organizational context. It is argued that unbounded innovations require an approach to understand and facilitate the interactions both within a range of actors and between the actors and technological artefacts. The insights from a sociology of technology approach can be applied to the multiplicity of negotiations and alignments that constitute the implementation of unbounded innovation. The utility of concepts from the sociology of technology, including ‘system building’ and ‘heterogeneous engineering’, is demonstrated by applying them to an empirical study of an unbounded innovation on a major construction project (the new terminal at Heathrow Airport, London, UK). This study suggests that ‘system building’ contains outcomes that are not only transformations of practices, processes and systems, but also the potential transformation of technologies themselves.

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