

Representational artefacts in social problem solving: A study from occupational rehabilitation

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This paper highlights the role of design and designers in the creation of visual artefacts as boundary objects to be used in social problem solving. Many problems in human service systems can only be solved by purposive action amongst the stakeholders of the system but each stakeholder has only a partial view of the system. Boundary objects that present a multi-stakeholder perspective can facilitate problem solving by creating representations of the system that are meaningful to all stakeholders. In this study we used sensemaking (often a textual practice) and visualisation to create a high complexity representational artefact to enable shared understandings of an occupational rehabilitation system.

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Designers have recently become interested in the contribution that design can make to the solution of a wide range of social problems. This development has been facilitated by managers and organisational development practitioners turning to design in their search for new methods of service improvement but also through designers broadening their skill sets to tackle complex social problems (Bessant & Maher, 2009; Bevan, Glenn, Bate, Maher & Wells, 2007). Activity through international networks such as DESIS (Design for Social Innovation and Sustainability), the Systemic Design Research Network and other similar networks, have taken design into new areas of practice. Design has entered into the search for innovation in service delivery and, in particular, innovation in the delivery of health and education services. Design methods – including ethnographic approaches to understanding user needs and the rapid prototyping of designs – have been employed to develop co-creation and co-production with users in human service delivery (Ehn, Nilsson, & Topgaard, 2014).

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Designers have come to appreciate the complexity of designing in such service systems where there are multiple stakeholders who occupy different roles at different stages of service provision. Stakeholders may at one point be users of a service and at other points service providers. Service in such systems is not delivered within a one-to-one relationship between customer and service provider; rather there are multiple relationships between stakeholders, giving rise to complex problems that require the construction of new problem frames before problems can be approached (Pinho, Beirão & Patricio, 2014). The multiple interdependencies and fluid boundaries of complex systems create a high level of indeterminacy that provides new challenges for designers (Sangiorgi, Patricio & Fisk, 2017).

One approach to dealing with complexity is to create boundary objects that communicate system properties, and there exists a role for designers in the creation of such objects. Boundary objects address discontinuities (or boundaries) in service systems. They are artefacts that can cross boundaries, creating continuity by bridging different domains of knowledge and developing interaction amongst heterogeneous actors within the system. Boundary objects promote interaction amongst the heterogeneous actors within a service system to develop dialogue, problem solving and shared learning (Wenger, 1998). Such learning can lead to the collective formation of domain mediating concepts and problem solving concepts (Engeström, Engeström, & Kärkkäinen, 1995). Carlile (2002, 2004) describes the role of boundary objects as that of representing, learning about, transferring, negotiating, altering and creating new knowledge to resolve the boundary issues that arise in complex systems. Representational artefacts can perform such roles, simplifying depictions of current and future states of the service system and introducing new system concepts.

Human service systems are multi-stakeholder systems. Stakeholders are all those individuals and groups that affect or are affected by a service system. This definition covers a broad range of individuals and groups, many of whom have differing roles at different points of the system. Stakeholders are thus often sub-divided into those with a primary or direct interest and those with a secondary or indirect interest. Amongst the first group, 'users' of the system are those directly providing or receiving service, whilst the broader group of primary stakeholders may include service regulators and others. Secondary stakeholders may include employee unions and advocacy groups. In what follows we prefer the broader term 'stakeholder' to cover the divergent roles of the groups that we study (Freeman, Harrison, & Wicks, 2007).

In multi-stakeholder and multi-user service systems no single stakeholder and no single user is central to the functioning of the system. Social problems in such service systems are usually resolved by interaction amongst all stakeholders. This interaction may be in a political process as stakeholders

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