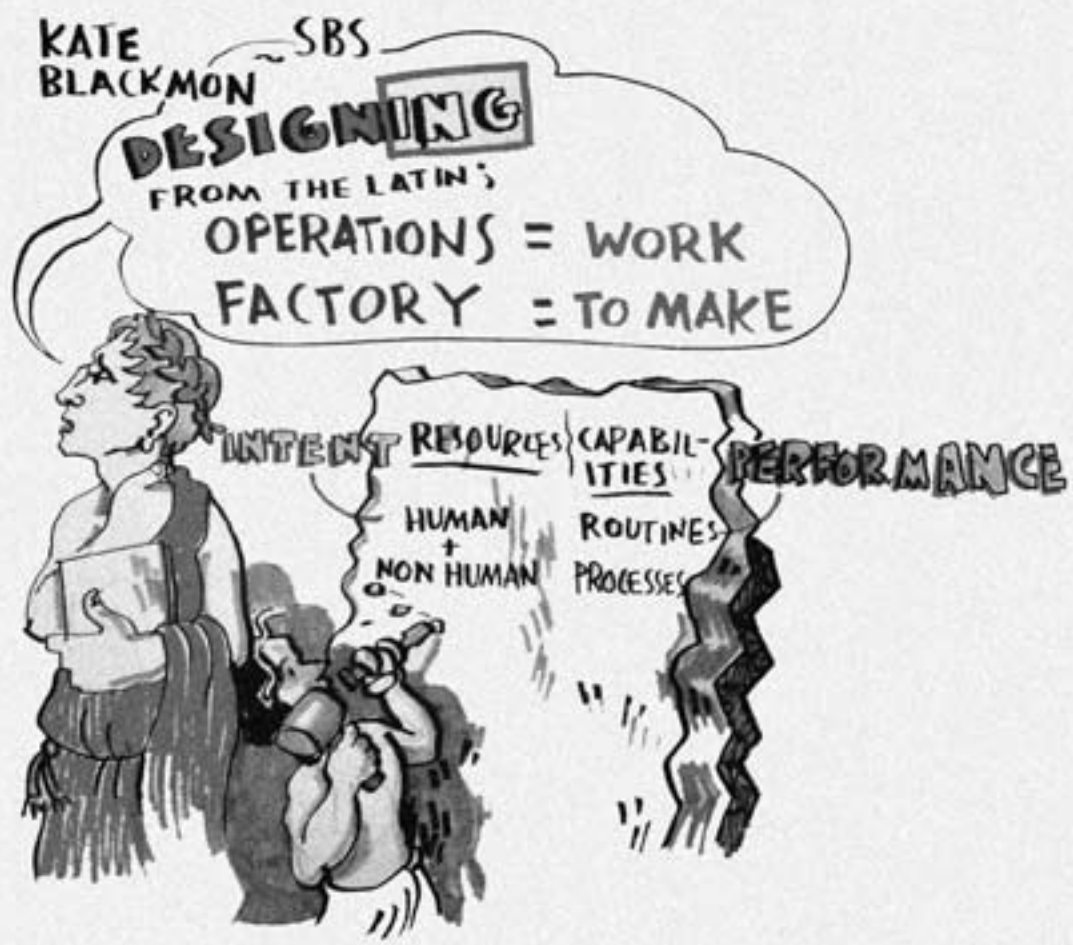


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Designing for services: design thinking and operations management – converging or parallel worlds?

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How can Designing for Services in Science and Technology-based Enterprises point us to a potential way forward for service management? In this perspective essay I examine the extent to which design and operations share complementarities through reflecting on the D4S project, which offers a chance to examine how both design and operations focus on practical problem-solving in the context of innovation and technology.

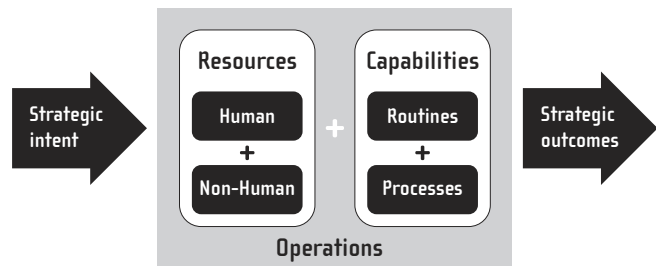
At least superficially, the underlying principles of design and operations thinking appear incompatible. Design has been described as a set of principles and a way of thinking that enable people to manage and create in a world of material objects. Design thinking – thinking broadly about problems, developing a deep understanding of users, and recognizing the value of the contribution of others – has been argued to be as applicable to management problems as to design (Dunne & Martin 2006). Operations deal with the transformation process for turning inputs into outputs of products and services.

Design thinking tends to draw on visual images and to have a highly stylized visual language drawing on a shared set of visual symbols, whilst operations thinking draws on highly abstracted and mathematical modelling. Within the design literature, design thinking and operations thinking are often portrayed as antithetical in a dialectic pitting such visual thinking and intuition against engineering and logic. In the UK, the Arts and Crafts movement made a virtue of antagonism to the “factory” ethic (Crawford 1997), whilst on the other hand, with the exception of the Progressive era in the US, designers have mostly ignored workers and work. Furthermore, design thinking focuses more on the means – the experience of designing. Whilst operations thinking focuses more on the ends – the creation of a viable process meeting pre-specified operational and economic targets.

Such antithesis is not useful, however, as the D4S project has illustrated. Both design and operations thinking have more in common within the management academy than either has with other management disciplines. There is increasing interest from both sides in issues of design-led problem solving, for example, in Herbert Simon’s work on ill-structured problems (Simon 1973), and the work by Joan van Aken on design-led approaches within management (Van Aken 2004, 2005).

Furthermore, both design thinking and operations thinking focus on the relationships between resources and capabilities that are used to operationalize the strategic intent of the organization, as shown in Figure 8. Design thinking can be described as focusing on resources embodied in people and enacted at the level of routines, whilst operations thinking

Figure 8: the relationships between resources and capabilities



can be described as focused on resources embodied in non-human resources and enacted at the level of processes.

If we dig deeper, however, both design and operations thinking focus on solving problems in the material world. As illustrated in D4S, designers are increasingly moving from the design of artefacts – objects, images and the built environment – to the design of interfaces and of processes. Both design thinking and operations thinking provide both users and designers with languages that describe what is going on in these interfaces and processes, although each draws on considerably different epistemologies and ontologies. It may be, therefore, that there is some common ground where design thinking and operations thinking meet and enrich each other. Roger Martin, Dean of the Rotman School of Management at the University of Toronto, describes the role of design as looking for innovative solutions that are different from and superior to existing solutions to a problem (Dunne & Martin 2006). Design thinking may provide an alternative conceptual approach to problem solving; therefore, cross-training and/or cross-functional teams may enrich the range of solutions considered and selected.

One particular aspect where this complementarity may exist is scalability. Designers are trained to see systems from the perspectives of individuals, whilst operations are trained to see systems from the perspectives of masses. Whilst design solutions may not scale up, operations solutions may not scale down. The second area is complexity. Design thinking may not work as a way of designing a service system when systems are complex and interactions are unpredictable. In these circumstances, however, design thinking at the end of the process may be useful for optimizing the user interface and helping minimize the complexity faced by users. As illustrated in D4S, scalability may be a particular challenge for small and medium-sized science and technology-based enterprises. The transition zone between custom and mass processes may be particularly salient here.

Design thinking is well-suited to dealing with complexity,

but complex solutions tend to be highly particularistic and non-reproducible. Such idiosyncrasy limits the development of transferrable business models, for example. Operations thinking is particularly strong in reductionist thinking, where each element of a problem is broken down into the smallest feasible unit, solved, and then reassembled at the system level. Whilst suited for rational problem-solving and well-structured problems, it may be that ill-structured, so-called “wicked”, problems may be particularly resistant to this approach. Design thinking may offer a way of overcoming reductionism, by offering a more holistic viewpoint, whilst operations thinking may help improve the robustness of design solutions.

To conclude, design and operations thinking may become a natural pairing within the management academy, if they can find a common meeting ground. There has been a call for more design-led thinking within management, which both could offer. It may be, however, instead of a synthesis that there needs to be resonance (Brown & Blackmon 2004), oscillating back and forth between these two areas.

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