Chapter 11 Making Information Systems Material through Blackboxing: Allies, Translation and Due Process

Jim Underwood University of Technology, Sydney, Australia

Edin Tabak *Curtin University of Technology, Australia*

ABSTRACT

In this paper, a case study of the evolution of an organisational intranet is used to compare the concepts of "materiality" with actor-network theory's black-boxing. The authors argue that information systems need to become material through "due process". Through this paper, questions arise as to what types of material allies are useful in this process, and whether these allies can co-evolve (or "co-materialise") with the system. In this case there seemed to be existing technical actors, but the authors question whether this is always the case.

INTRODUCTION

Sociomaterality can be regarded either as a broad category of research approaches which includes actor-network theory (ANT), or as a particular theoretical view which is in some ways an alternative to ANT - emphasising performance, embodiment and mutual constitution rather than inscription, symmetry and translation. In this paper we argue briefly for the second view, and interpret becoming "material" as reaching the final stage of ANT translation, mobilisation or "black-boxing". We then describe an interpretive case study in which we ask what it is that allows an information system to be successfully black-boxed, using the concept of "due process" in systems development (McMaster, Vidgen, & Wastell, 1998). We then re-analyse the case results to investigate whether successful black-boxing depends on a wise choice of allies, in particular "material" allies. In our case these seemed to be existing technical actors, but we question whether this is always the case.

CONSTRUCTING MATERIALITY

'Sociomateriality' has recently become an important stream of discussion in the literature on information systems theory (Orlikowski & Scott, 2008; Dale, 2005). While this recent research claims to recognize the performative entanglement of the social and the material and 'their mutual (albeit different) constitution and the performed or enacted nature of the boundaries between them' (Orlikowski & Scott, 2008, p. 25), there is little explanation of what the social and the material actually are and how they differ. Orlikowski contrasts the sociomaterial approach with that of Actor-Network Theory, saying that sociomateriality concentrates on performance and embodiment rather than networks (ibid), while at the same time quoting with apparent approval Latour's derisive rejection of any division between social and material (p. 40). Hayles distinguishes between 'informatics' (probably meaning information systems), representing the material and 'incorporation', and information, representing the conceptual (mental? social?) and 'inscription'.

By "informatics" (a term appropriated from Donna Haraway, who uses it in a somewhat different sense), I mean the material, technological, economic, and social structures that make the information age possible. Informatics includes the late capitalist mode of flexible accumulation; the hardware and software that have merged telecommunications with computer technology; the patterns of living that emerge from and depend upon access to large data banks and instantaneous transmission of messages; and changing habits of posture, eye focus, hand motions, and neural connections that are reconfiguring the human body in conjunction with information technologies. (Hayles, 1993, p. 149)

This seems a long way from any usual sense of 'material'. It sounds very much like an actornetwork, a hybrid of the social and the technical, a hybrid that undermines the meaning of the distinction on which it is built. Perhaps one difference is that ANT's scripts have traditionally been in terms of external ends ('close the door') rather than behavioural means.

A more helpful approach is provided by Law (2004), who begins from the concept of 'material culture' in anthropology. Here the expatriate anthropologist observes tools, living arrangements, sacred objects, rituals - in fact all the outward signs of everyday life - and from this creates a narrative of the culture. The advantage is that the anthropologist does not need to see 'inside the heads' of their subjects; the disadvantage (as I'm sure Hayles would argue) is that the anthropologist may not even notice important objects of the material culture unless the anthropologist has been fully incorporated into that culture. Law then uses this idea to explain Latour's experience at the Salk institute (Latour & Woolgar, 1979). As a non-scientist Latour would have had great trouble understanding what the researchers were looking for, but he could observe how they were looking for (or constructing) it - and this involved desks, whiteboards, computer printouts, draft academic papers, meetings and a variety of laboratory equipment. These were the materiality of the research practice but, especially in the case of the more complex equipment, they were obviously socially constructed, embodying sophisticated biomedical theory.

Whether something is regarded as material by the practitioners depends to some extent on its existence and function being accepted as non-problematical. From an ANT point of view we can say that the material is a network that has mobilised, that has been black-boxed, that no longer needs to be described as a network. Our question in this paper is how the social (in the non-ANT sense) is involved in this black-boxing.

The 'sociology of translation' to materiality was described by (Callon, 1986) in his study of scallop fisheries. Callon sees translation (of exactly what is not made clear in Callon's paper) as a progression through four stages or 'moments' which attempts to co-opt the other actors 9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: <u>www.igi-global.com/chapter/making-information-systems-material-</u> through/70835

Related Content

Russian Information Warfare and 9/11 Conspiracism: When Fake News Meets False Prophecy

Michael Bennett Hotchkiss (2019). Developments in Information Security and Cybernetic Wars (pp. 236-266).

www.irma-international.org/chapter/russian-information-warfare-and-911-conspiracism/225554

Actor-Network Theory for Service Innovation

Lorna Udenand Janet Francis (2009). International Journal of Actor-Network Theory and Technological Innovation (pp. 23-44).

www.irma-international.org/article/actor-network-theory-service-innovation/1376

Internet of Things and Cyber-Physical Systems at the University

Dmitry Namiotand Manfred Sneps-Sneppe (2020). *Tools and Technologies for the Development of Cyber-Physical Systems (pp. 285-302).* www.irma-international.org/chapter/internet-of-things-and-cyber-physical-systems-at-the-university/248753

Networks, Agents and Models: Objections and Explorations

Fabian Muniesaand Ivan Tchalakov (2012). *International Journal of Actor-Network Theory and Technological Innovation (pp. 13-23).* www.irma-international.org/article/networks-agents-models/63000

Data Dissemination for Vehicles in Temporary Cellular Network Dead Spots

Ergys Pukaand Peter Herrmann (2019). *International Journal of Cyber-Physical Systems (pp. 38-55).* www.irma-international.org/article/data-dissemination-for-vehicles-in-temporary-cellular-network-dead-spots/247482