Chapter 19
Architectures of Motility:
ICT Systems, Transport and Planning for Complex Urban Spaces

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ABSTRACT
This chapter engages with contemporary approaches to urban planning by introducing an analytic strategy rooted in the sociological approach of Science and Technology Studies. By demarcating a ‘social frame’ and comparing this to the established ‘engineering frame’ through different ‘architectures’, the chapter reveals hitherto unrecognised features of the implementation of an intelligent transportation system called BLISS (the Bus Location and Information SubSystem). Through the ‘mobilities’ conceptual approach, the relationships between various aspects, including the urban space, the experience of passengers, drivers and managers, and component technologies, are revealed as forming an ‘assemblage’ of conflicting features, that at the same time move toward a form of ‘stabilization’. The underlying point, is that we need to engage not only with the technical difficulties of technology implementation in the city, but also with the contingent and experiential processes of those who use, and are affected by such implementations.

INTRODUCTION
The notion of e-planning in urban contexts is, in important ways, linked to facilitating and disciplining the movement of people, their mobility within urban space. The Strategic Research Agenda of The European Research Forum for Urban Mobility (EURFORUM) identifies four main components of a proposed ‘urban mobility system’: 1. users’ needs and behaviours; 2. the urban structure; 3. integrated mobility services (usually based on Information Communication Technologies ICTs); and integrated transport systems. The first two relate to transport demand, the second two to transport supply. The agenda therefore prioritizes ‘users and user-related organisations’ in the development of effective and sustainable transport policy and practice. E-planning is increasingly geared towards understanding the
impact of policy measures and system innovations on mobility behaviour.

In this chapter we suggest how e-planning can be strengthened through undertaking a sociological analysis of mobility based upon the study of the design and implementation of an Intelligent Transport System (ITS) in a northern city in the UK. Key to our analysis is an understanding of the way different configurations of urban arrangements, technology interventions, and user experiences result in varying ‘degrees of mobility’ (Urry, 2007) for different people. We discuss this understanding in relation to the social theory of ‘mobilities’ that provides an analytic frame for developing a nuanced understanding of the complex relationships between physical spaces, behaviour, experience and technologies (Kaufman, 2002). Our substantive focus is on the bus, seen as a crucial public transport in urban centres; and much of our story is about matters of detail that might seem mundane. In fact, however, any future e-planning will need to understand how innovation will only become normalised if it articulates with everyday existing arrangements and practices.

A defining feature of transport management systems is that while they are integrated into multiple aspects of the urban environment and a key component of e-planning, they are largely invisible as a form of “ubiquitous computing” (Weiser, 1993). Much of this chapter seeks to reveal the details the features of the ITS central to the process of reconstructing (or ‘reassembling’ (Latour, 2005)) the system as an understandable social object. These descriptions lead off from moments of ‘breakdown’, wherein the system is seen to fail. Importantly, these failures are seen as such by the users and stakeholders of the system, rather than the consequence of an objective assessment on the part of the researcher, as some sort of evaluator or arbiter of worth. They are also characterized by multiple features, at once technical, perceptual, and social. They are far from mere ‘technical failures’. To bring out these cross cutting features, we conceive of these breakdowns as occurring at points of intersection or interaction between differing ‘architectures’. Our motivation here is to engage with engineering understandings, yet disrupt taken for granted notions of the term. The descriptive elements are then combined with theoretical and conceptual resources to form a ‘deep’ reading of the system and its social consequences. Our conclusions suggest the need for a perceptual or paradigmatic shift in this aspect of e-planning (within design, as much as research). The resulting sensitivity to the multifaceted features of the ITS, and other such large-scale, ubiquitous, urban technologies that feature in e-planning, should carry forward into research and design activities by orienting practitioners to the socio-technical, temporal and essentially interpretive aspects of the technical system itself.

The description and discussion are based upon a three-year study of the design and implementation of the system. The research involved a combination of interviews, focus groups, and fieldwork observations. Regular semi-structured interviews were carried out with the primary project collaborator at the Network Management team as well as with related staff from the transport section, complemented by informal telephone interviews throughout the fieldwork stage of the project. Interviews and day-long discussions were also carried out with members of the technology development team, and members of the bus company’s operational management team. These formal interviews (n=10) were underpinned by a more informal strategy, whereby results of the analysis were presented in successive feedback and discussion meetings. Interviews were also conducted with bus drivers during the latter part of the fieldwork to determine their views on the system and the changes it would bring to their work practices. Focus groups (made up from 25 passengers) were carried out throughout the implementation of the system (n=4). Initially these were characterized by facilitated discussion centering on the passengers’ practices and...