

Navigating knowledge – A case study of the introduction of GPS to a Dublin taxi firm

Carolyn Grampp

Maeve Houlihan

Paul McGrath

University College Dublin
The Michael Smurfit Graduate School of Business
Department of Business Administration

Blackrock, Co. Dublin

Ireland

Tel: +353 1 716 8613

Fax: +353 1 716 1132

carolin.grampp@ucd.ie

maeve.a.houlihan@ucd.ie

paul.mcgrath@ucd.ie

Track: Academic

Abstract

Originally developed for military application, the Global Positioning System (GPS) is a worldwide satellite based navigation system. This paper investigates the recent adoption of GPS by a Dublin taxi firm - National Radio Cabs (NRC). It explores the outcomes for both drivers and organisation when the social properties of knowledge are replaced by a technological system.

Working as sole traders, drivers contract their services to a taxi firm that manages the system and distributes centrally received 'jobs'. Firms traditionally rely on multi-way radio communication for work distribution and knowledge sharing. GPS provides monitoring and information management capacity that fundamentally transforms these two activities. From one perspective, the properties of GPS promise greater organisational self-knowledge, increased operational efficiency and thus increased 'informating' activity (Zuboff, 1988). In the case of NRC, GPS technology fundamentally redefines the organisation's knowledge system.

Prior to GPS, knowledge sharing was deeply linked to ongoing radio interaction, which served to create a 'virtual' network whereby all members directly participated in and 'heard' the organisation doing its work. Further, informal gatherings at taxi ranks and

coffee stops were opportunities for community engagement. In these ways, members of the organisation constituted, negotiated and enacted the organisation's knowledge system through effective communities of practice (Orr, 1990).

GPS replaces the previous network with regulated and formalised means of interaction that do not integrate existing deeper structures. A primary outcome is the removal of multi-directional radio communications between driver, base and driver-network and its replacement with a highly sophisticated automated job allocation system. As such, GPS is rendered the single source of the organisation's knowledge and knowledge is rendered 'static' rather than social. The organisation is reconstructed as the owner, holder and distributor of that knowledge.

These developments have their roots in the management's rationale for introducing GPS. Driven by pressures to increase efficiency and customer service, GPS technology offered an opportunity, explicitly, to reduce high dependency on the discretion of drivers and 'time-consuming' contact. Those goals are reflected in the technology's focus: the improvement of operational efficiency is interpreted to mean externalised 'expert' knowledge. GPS represents a scientific 'solution' to location, navigation and tracking management. Evident here is the classic interpretation of knowledge as 'thing' rather than 'process' (Blackler, 1995).

Whilst we do not make claims for the universal determinism of technology, nor for GPS, we seek to explore the underlying nuances and implications of this case. NRC drivers embrace the new system, perceiving it to offer them more efficient and equitable work allocation and potentially increased revenue per hour. They are also attracted to the safety benefits of being tracked, and the protection of textualised data-capture.

Yet a directly observable consequence of GPS introduction is a turn-around in the power relationships within the organisation. The driver's role is shifting from a self-determined one, to something new. While in the past drivers defined their work activities, GPS now dictates the majority of their movements, taking many choices 'out of their hands'. Changes in the operational processes result in a further isolation of drivers from each other.

From the organisational perspective, the knowledge configuration is also changing. Currently members retain past knowledge, which reduces the impact of shortcomings in the system. However, we suggest that GPS suppresses the exercising of knowledge, fundamentally changing the way that knowledge is acquired and shared. In particular, it sets a very different context for the socialisation of new drivers. What will be the impact of these dynamics for future operations?

References:

Blackler, Frank (1995) Knowledge, Knowledge Work and Organizations: An Overview and Interpretation, *Organization Studies*, 16, 6 p 1021 – 1046

Orr, Julian (1990) 'Sharing Knowledge, Celebrating Identity: Community Memory in a Service Culture', in David Middleton and David Edwards (eds) *Collective Remembering*. Sage, London

Zuboff, Shoshanna (1988) *In the Age of the Smart Machine: The Future of Work and Power*, Basic Books,