



Intelligent Infrastructure Futures

The role of information in decision making for transport

How and why individuals arrive at their decisions, and finding ways to influence them, lie at the heart of travel behaviour, giving rise to patterns of mobility and the demands upon our transport systems. The effectiveness of an IIS will depend, in part, on how it assembles and disseminates information that can influence our travel choices.

We make decisions at several levels. Strategic decisions shape our longer term behaviour. Where we choose to live and to work and whether we choose to buy a car or a season ticket, for example, affect our future use of transport. Even when we have made these strategic decisions, we continue, actively or passively, to make many tactical choices about individual journeys – such as where, when, by what route and by which mode to travel.

People make choices in the context of transport systems that have become more extensive and complex. Over the past 40 years, the length of the UK's road network has extended by about one quarter. We now have a public transport system run mostly by private operators. Thus the industry consists of a multitude of organisations. We have a bewildering array of fares for travel between the nation's 2500 railway stations. At certain times and places our transport systems run very close to capacity, creating instability and unpredictable travel conditions. Thus the challenge of informing the traveller has markedly increased.

However, advances in information and communications technologies give us an opportunity to rise to that challenge and to gather, manage and communicate vast amounts of information to the traveller. Today's IIS is characterised by the existence of online information services available via a phone call or through fixed or mobile Internet access.

Information services

Any information service will probably involve several organisations, especially if it is to deal with more than one transport mode. Each organisation will have its own objectives: at times these may be in conflict.

Travel information can include such 'static' information as train timetables and maps of the road network that assist in planning journeys. Real-time information, on the other hand, can warn of incidents or of congestion, for example, and can allow travellers to adjust their plans before or during a journey.

Pioneering travel information services in the UK include: National Rail Enquiries, which offers static and real-time information on trains; Transport for London's Journey Planner, which provides door-to-door travel options that can include walk, bus and tube journey stages; and the Government's Transport Direct service, which encompasses multi-modal journey planning, covering walking, bus, car, coach, rail and air.

The information marketplace has grown rapidly in recent years, but we have limited empirical evidence on the demand for travel information, and the consequences of its use. The simple presumption that individuals want or need information to assist their decision making is misplaced. It is tempting to think of travellers as rational decision makers who want to identify the most cost-effective options. However, research reveals that if an individual is already aware of at least one travel option that meets their minimum requirements then this substantially limits the motivation to seek information on alternatives and review travel options. Many individuals are creatures of habit and most of the journeys they undertake are short and familiar.

Any inclination to seek travel information that may arise also has to compete with the other calls on our time. Thus the demand for, and impact of, travel information may not be as great as proponents of such services would like. However, this does not mean the role of information services in an IIS is insignificant. On some occasions in some circumstances people will face less familiar, perhaps longer, journeys that may be prone to uncertain disruption. The need for, and influence of, information can then be more critical.

Information and behaviour

When considering travel options, the choice is not only about comparing their absolute merits but about their relative perceived viability from the traveller's perspective. Importantly, while travel information cannot generally change the nature of the actual travel options and their attributes, it can change or correct perceptions. This may prove significant in a climate where the state of our transport systems and the conditions of travel continue to change, with widening gaps between perceptions and realities.

It is tempting to believe that technological advance and ingenuity will lead to 'clever', personalised information services that can solve transport problems. Some of the barriers to influencing travel choices may well be technological, but human nature, and the availability of and relative merits of travel options, also play a part in the choices individuals make.

This Research Brief is based on the Research Review written by Professor Glenn Lyons of the Centre for Transport & Society in the University of the West of England, Bristol, for the Foresight Project on Intelligent Infrastructure Systems. Series editors Professors Phil Blythe, Will Stewart and John Urry. Editor Michael Kenward.

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