



PRIVACY CASE STUDIES

Case Study 1: Privacy-sensitive GPS-enabled Insurance

Mobility-pricing is one of the avenues leading to the information highway. Using a combination of positioning, communication and information processing, automobile insurance can be priced based on actual mileage of the vehicle. Vehicle's location is periodically and electronically disclosed to a central server for invoice generation. This raises the possibility of this data being used to reveal the drivers' identity and social activity. Past research has only been speculative of the 'motorists' privacy perspective'. This paper uses mobility-priced insurance as a case study and offers respondents three different designs ranging from lowest privacy to highest privacy, and measures their interest about each of these products and seeks their dollar pledges for willingness to pay for higher privacy protection. This study also presents probable correlations between privacy choices and demographics. It is hoped that the results of this research can be used to influence the design of other mobility-based payment systems.

Reference:

IQBAL, M.U., & LIM, S., 2007. Designing privacy-aware mobility pricing systems based on user perspective. *Journal of Location Based Services*, 1(4), 274-299.

Case Study 2: Anonymous Electronic Toll Collection

Electronic Toll Collection (ETC) has attracted major attention to charge toll from motorists without the need for them to stop at toll plazas. For ETC to perform its operations, it requires the identification information of the transponder attached to the windscreen. This convenience of a faster trip is at the cost of loss of personal autonomy and privacy. This paper studies the loss of anonymity in current systems and highlights the importance of anonymous operation from an ethical, legislative, standards-based, and technical point of view. A significant unknown is whether the public has a preference towards any particular payment options in the uptake of privacy-aware tolling. This paper argues that the decline of privacy-aware features in past tolling applications may be associated with the perceived difficulties of pursuing privacy options and reports the results of a survey conducted with experts from the positioning industry and draws relation between privacy and payment options. This study predicts that the success of future privacy-sensitive designs in tolling industry depends on the promulgation of various payment methods made available to pay toll charges.

Reference:

IQBAL, M.U., & LIM, S., 2008. Designing tolling technologies with privacy in mind: A user perspective. *Transportation Research Part C- Emerging Technologies*, (Under Review).

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