



OMNILINK's Spatial Privacy Risk Management Model

In recent years there has been an explosive growth in location technologies, ranging from GPS-based phones, satellite navigation, telematics, location-based services, RFID applications, spatial mapping and availability of precise geospatial content on the internet. While there are exciting opportunities for organisations involved in these businesses, there are also associated risks in handling of these complex data structures. These risks have not been fully understood or recognised and the pace with which these technologies are growing have outstripped both legal and policy attention.

Sensitivities about privacy protection of consumer information are heightened, and issues related to management of spatial and identifiable data are becoming increasingly complex. Taking a proactive approach to addressing spatial privacy risks can help organisations build customer trust, protect their brand, avoid costs, and help them better manage financial risks.

OMNILINK's '*Spatial Privacy Risk Management Model*' can refine location privacy from an abstract concept into concrete actionable issues. This model has evolved through in-depth research. We also outline two case studies describing our use of this privacy risk model in the design of two applications which use GPS and RFID technologies, namely, GPS-enabled insurance and electronic toll collection.





Our privacy risk management program can help organisations address these issues and ultimately help them create a new covenant of trust with their stakeholders. The key benefits of this proactive approach include: -

- ✓ Customer satisfaction
- ✓ Reduced vulnerability to reputation from litigation
- ✓ Differentiator from competitors
- ✓ Management of privacy as a business strategy
- ✓ Compliance with regulatory regimes as well as being prepared for any future changes.

Our solutions for privacy risk management include:-

- Assessing and mitigating potential vulnerabilities associated with spatial data.
- Conducting privacy impact assessments
- Conducting privacy audits
- Recommending how to manage spatial privacy responsibly and effectively in the context of ensuring business growth

If you would like to discuss how OMNILINK and our expert consultants could assist you to identify your privacy risk please contact us through the email below or contact David Bruce (Director - Business Development) by email davidb@omnilink.com.au or mobile on 0416 119 151.

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SPATIAL PRIVACY RISK MANAGEMENT MODEL



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.

References:

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.

References:

IQBAL, M.U., & LIM, S., 2008. Designing privacy-aware mobility pricing systems based on user perspective. *Transportation Research Part C- Emerging Technologies*, (Under Review).