CM50200 Mobile and Pervasive Systems: 6. Privacy, Security and Integrity design issues

Thomas Smith

Centre for Digital Entertainment
University of Bath
taes22@bath.ac.uk

Abstract. In developing mobile and pervasive computing, the issues of privacy, security and integrity of the user and the system are often difficult to design for. What are the issues for each of these factors? How can the designer be aware of and reason about these issues in the design and development processes? How can the user be aware of these issues and when they are breached?

1 Introduction

1.1 Overview

This paper looks at the issues surrounding privacy, security and integrity in the context of mobile and pervasive computing. After a brief look at the field as a whole in Section 2 and a definition of terms, Section 3 attempts to draw a distinction between x and y. Sections 3.1, 3.2 and 3.3 look at the issues relating to privacy, security and integrity respectively, and Sections 4.1 and 4.2 look at how designers and end-users can be aware of these issues. A number of existing approaches relevant to the discussed issues are noted, and conclusions drawn about the current state of research and wider awareness among end-users and designers.

2 Background

As with other areas of computing, mobile and pervasive resaerch has to cope with issues surrounding the privacy, security and integrity of developed systems. ... In this paper, these issues are considered with reference to existing research in these areas, and

Privacy is

Security is

Integrity is

Each of these areas covers a number of related

3 Issues

3.1 Privacy

3.2 Security

Special considerations for mobile/pervasive devices: shoulder surfing, contactless biometric identification

[3]

3.3 Integrity

4 Awareness

4.1 Designers

4.2 End-users

[1]

[2]

5 Conclusion

References

[1] Balebako, R., Jung, J., Lu, W., Cranor, L.F., Nguyen, C.: "little brothers watching you": Raising awareness of data leaks on smartphones. In: Proceedings of the Ninth Symposium on Usable Privacy and Security. pp. 12:1–12:11. SOUPS '13, ACM, New York, NY, USA (2013), http://doi.acm.org/10.1145/2501604.2501616

[2] Bravo-Lillo, C., Komanduri, S., Cranor, L.F., Reeder, R.W., Sleeper, M., Downs, J., Schechter, S.: Your attention please: Designing security-decision uis to make genuine risks harder to ignore. In: Proceedings of the Ninth Symposium on Usable Privacy and Security. pp. 6:1–6:12. SOUPS '13, ACM, New York, NY, USA (2013), http://doi.acm.org/10.1145/2501604.2501610

[3] Schaub, F., Walch, M., Könings, B., Weber, M.: Exploring the design space of graphical passwords on smartphones. In: Proceedings of the Ninth Symposium on Usable Privacy and Security. pp. 11:1–11:14. SOUPS '13, ACM, New York, NY, USA (2013), http://doi.acm.org/10.1145/2501604.2501615