

# Cybersecurity Gaps Investigation – Framework for Analysing Mobile Phone Users

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## Abstract

*The rapid growth of mobile device users and increasing number of services offered by mobile phones brings new concerns in cybersecurity. According to the reports we have over 3.2 billion smartphone users worldwide. Mobile devices are used not only for human to human, but also for human to machine, and machine to machine communication and interaction. In the last decades smartphones replaced many devices: phones, cameras, GPS navigation, answering machines, scanners, voice recorders, mobile drives, paper money, so they collect and store a lot of relevant data. The fast changes in technology leads also to frequent smartphones replacement. The replacement procedure can be a weak point in the security ecosystem. Firstly, old, replaced devices store a lot of private or confidential data that may remain unprotected, so could be taken over, disclosed, or used for various types of attacks. Secondly, new devices must be appropriately deployed, configured. Users need time to learn how to use them properly and safely. Therefore, the moment of smartphone replacement could be a weak point of cybersecurity ecosystem.*

*In this paper we present the framework of research addressing the cybersecurity, focusing on the moment of smartphone replacement. We prepared the survey for mobile phone users that allows to verify how users prepare themselves and perform the replacement procedure, and therefore what knowledge, skills and behavior is needed to increase the level of cybersecurity, when the device is replaced. The framework can identify security gaps in using smartphones and can help to make this process more secure.*

*The presented framework could be useful not only for the cybersecurity specialists that are looking for new vulnerabilities or mechanism for strengthening the security ecosystem, but also for common smartphone users, to increase their cyber awareness. Finally, the presented tool can be useful for creating trainings and curricula aimed at raising the mobile phone users level of cybersecurity knowledge and skills.*

**Keywords:** cybersecurity, cybersecurity awareness, cybersecurity education, mobile device, security framework