Effective Risk Communication for End Users: A Multi-granularity Approach

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❖Risks associated with mobile devices

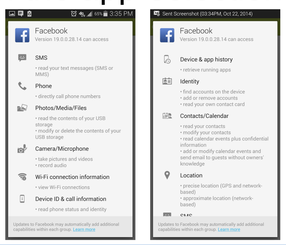
❖Smart mobile devices are pervasive and convenient, but raise new privacy and security concerns

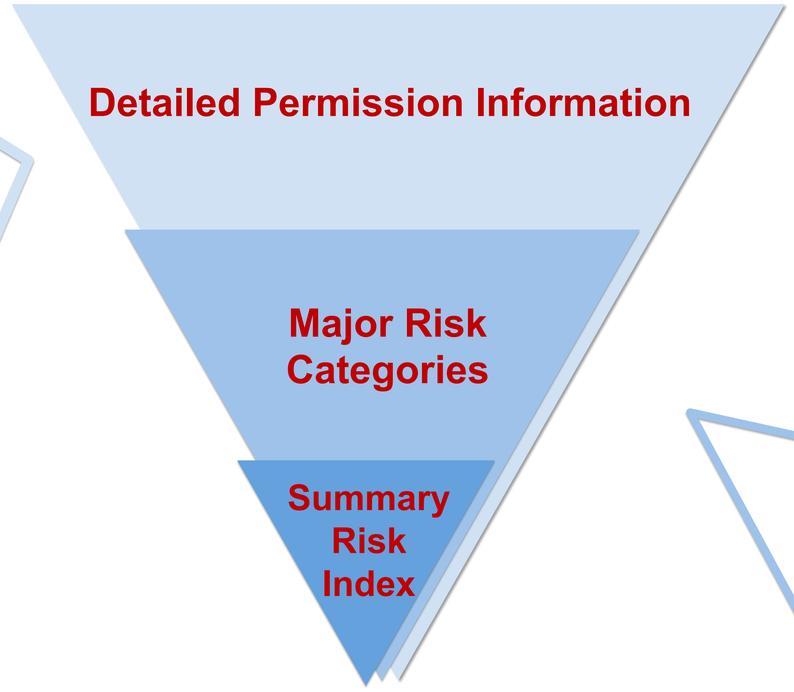
❖Current way of communicating risks for Android is not effective

✧ A list of permissions

✧ Users do not understand, ignore

✧ Late in the app-selection decision process





❖Major risk categories of concern

❖Experts: Semi-structured interview and card sorting (sort permissions into groups)

❖Common users: Questionnaire survey

❖Three major risk categories (Jorgensen et al., 2015)

✧ Personal privacy

✧ Monetary loss

✧ Device stability

❖Display of major risk categories

❖Compare different ways of presenting the major risk categories

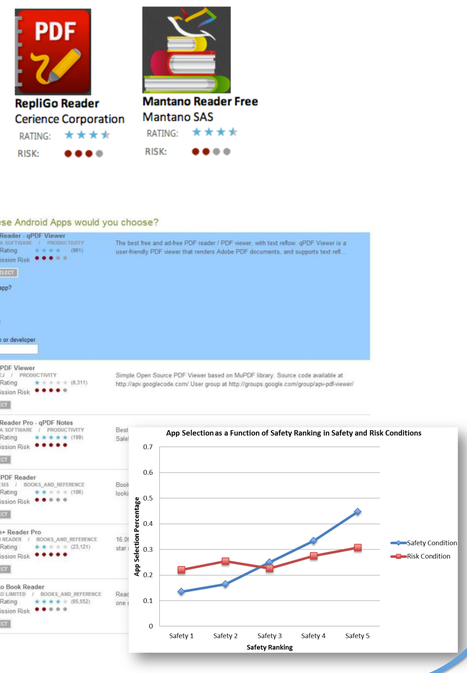
❖Summary risk index

❖Provide risk information early in the decision process, but in the form of summary risk scores, computed from the permissions. These scores allow easy comparison between apps (Gates, Chen, Li, & Proctor, 2014)

❖Risk vs. safety framing

❖The efficacy of the risk scores may depend on the way in which the information is presented, or framed

❖Safety score is more compatible than risk score with the decision context (user rating, population stereotype for scores; Chen, Gates, Li, & Proctor, 2014)



❖Apply to other contexts of risk communication in cybersecurity

❖E.g., Warning about phishing attacks