Smartphone App Privacy Icon Study Conducted for LifeLock, Inc.

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Rapid turn-around study

• Can a single icon and tagline linked to more detailed information effectively inform users about app data use?
  – Our focus was on testing the icon and tagline, not the linked information

• 2 exploratory focus groups
  – 5 Android users from the Pittsburgh area in each group
  – Participants discussed screenshots of Android screens with various icons and taglines

• Online study
  – 895 Android users recruited on Mechanical Turk
  – Each participant shown Android screens with one set of icons and taglines
  – Participants asked to choose apps for a friend
  – Measured impact of icons and taglines on app selection decisions
  – Collected additional data through exit survey
A set of screenshots used in focus groups. Each phone shows a different word game app-installation screen with an accompanying data sharing icon.
The four sets of icons and taglines tested in the first focus group
The four sets of icons and taglines tested in the second focus group
Focus group main findings

- Icons and taglines need to be visually distinctive to be noticed on Android app installation screens
- Traffic-light colors preferred to all-blue icons
- Distinct icons for each level of data sharing preferred to the same icon in varying colors
- Both arrow symbols and smiley icons understood by some participants
- “Personal info” seemed to better convey the meaning of the icons than “private info” or “your data”
- More concrete terms such as “advertising use” preferred, but More info could help explain vague terms
- Participants understood the use of the More info button and said they would likely click on it for details
The four sets of icons and taglines tested in the online study
Screenshot of app-installation screen. This screen or a similar one (adjusted for the icons shown in each condition) was shown to most participants before they began the app selection tasks.
The lists of apps presented in the four app selection tasks used in the online study.
Online study main findings

- Icons and taglines can impact app selection decisions
- Emoticons were more effective than the arrow icons
  - Participants shown taglines with emoticons, made significantly different app selections than those not shown icons or taglines
  - Participants shown emoticons were more likely to mention keywords related to personal info, privacy, or sharing than participants shown arrow icons or no icons
- Participants made different app selection decisions depending on the accompanying taglines
- The effect of the icons was reduced when one of the apps under consideration was a well-known brand
- Icons most useful in attracting attention to the taglines, less helpful for improving understanding
Conclusions

• Displaying single icon and tagline on app-installation screens to describe information sharing is a promising approach to alerting users and enabling them to make informed decisions
  – Important for icon to stand out on app installation screen
  – Important to link icon to more detailed information

• Further work needed to refine designs and wording

• Further work needed to compare this approach with other proposed approaches