

Privacy Profiles for Enhanced Privacy Permission Management in Trigger-Action Platforms

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Motivation: IoT Trigger Action Platforms (TAPs) allow users to customize smart environments on third-party servers.

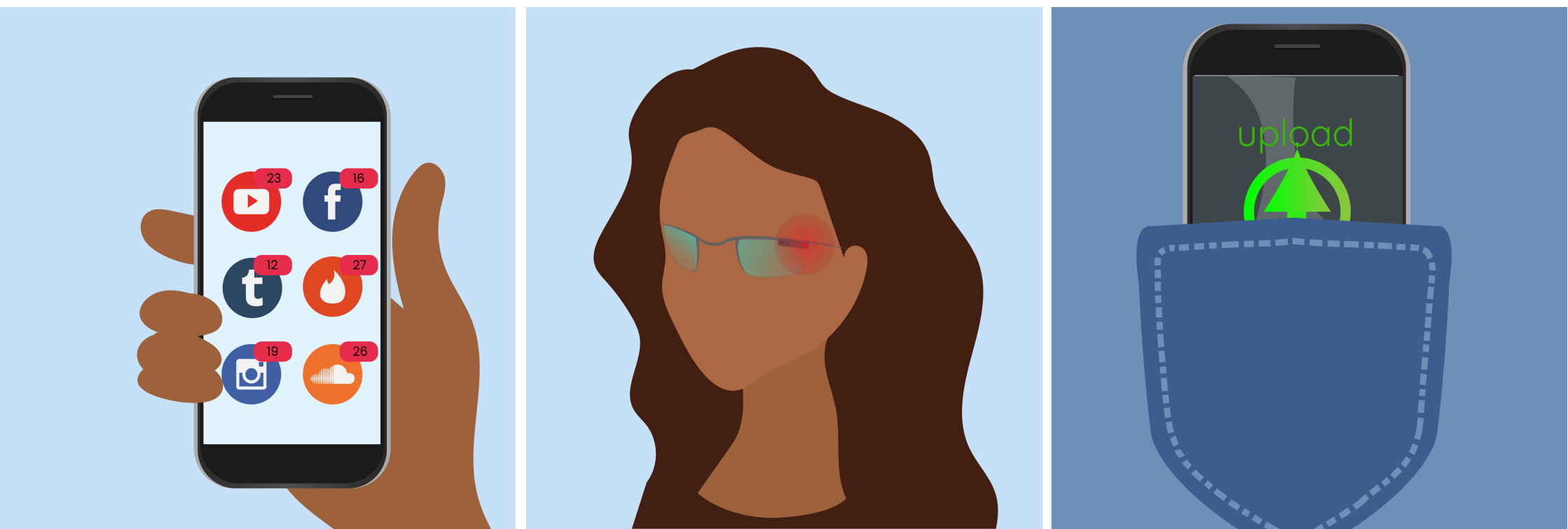
Problem: Personal data flows and processing by the IoT TAP and third parties allow only coarse-grained privacy settings. Users may be overwhelmed with setting fine-grained privacy permissions.

RQ: Can privacy personas be derived that can be offered as a basis for usable privacy settings management?



Background

The end users are becoming increasingly involved as high-level programmers to connect and personalize technological tools.



If new video then upload on social media.

Focus Groups ✓

Themes	Codes
Transparency	Transparency of settings and automation rules General Overview <i>Transparency of data recipients</i>
Control	<i>Control before the final action</i> <i>No full automation</i> Notification instead of action Withhold sharing for a time period Granular Control in the configuration and data sharing
Trust	Trust in the device <i>Trust in controller, process, recipient</i> Trustworthy safe service Assurance guarantee
Privacy of Bystanders	Transparency and consent for bystanders <i>Consequences of a user's action on bystanders</i> Consequences for vulnerable populations Protecting bystanders
Risks	Security Risks Data Leakage Safety of execution Hackers Accidental data sharing Reliability concerns for automated trigger Sensitivity of data type Surveillance
Data Minimization	Conditional and contextual access Minimize data to be shared
Confidentiality	Encryption of communication and of data at rest Self-hosting
Privacy Security trade-off	Usability and convenience Utility
Potential Misuse	<i>Unexpected data tracking/sharing</i> Customer monitoring <i>Sensitivity due to unspecified context</i> Social Stigma

Quantitative study for user segmentation

- 1 Item analysis - removing items
- 2 Exploratory Factor analysis - structure
- 3 Confirmatory Factor analysis - validation
- 4 Segmentation - clustering
- 5 Privacy personas - characteristics



Outlook

- Usable «on-the-fly» permission management
- Privacy assistant

References

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