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Security of complex Information systems

17. January 2018

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Delta Permissions (DP)

Assumption: Users are detained if told which permissions are unnecessary

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New permission models: DP



Pdf Merger would like to:

obtain permissions it doesn't need

View and manage the files in your Google Drive.

obtain permissions it needs to function

View and manage Google Drive files that you have opened or created with this app.

^①[1]

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Immediate Insights (IM)

Assumption: Users are detained if told which informations can be gained

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Far-reaching Insights (FR)

Assumption: Users are detained if told which far reaching insights can be gained

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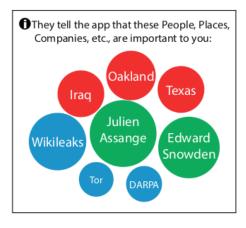
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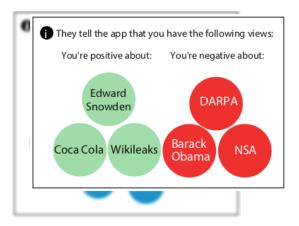
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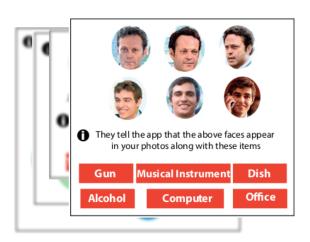
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Permission model study

210 participants

Four groups: DP (50), IM (54), FR (51), Control Group (55)

Procedure: Person confronted with an app and the wanted permissions ⇒ Would you install?

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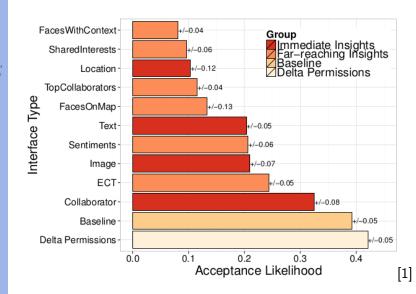
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App store developed by the authors

Focus on protection of the user's privacy

Three core feature

1440 registered users (effective 2016)

100 apps (effective 2016)

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Current misbehaviour of developers: How have the permissions changed?

Analysis 662 apps from three sources

Google Chrome Web Store: 159 apps

Other Google Web Stores: 66 apps

Outside of Google Web Stores: 437 apps

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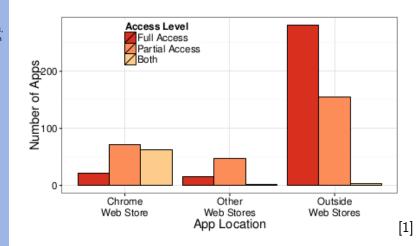
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Current misbehaviour of developers: The importance of metadata

Analysis of the informations that can be gained by accessing the users metadata

200 registered users with each more than ten text files

"General Topics": 78 percent matches

"Specific Topics": 66 percent matches

"Concepts": 31 percent matches but 69 percent are mostly similar

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Use more granulated permissions

Add an overview to cloud platforms

Inform users about insights that could be gained

Add an additional API

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Thank you for your attention!

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Reference

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References

[1] Hamza Harkous and Rameez Rahman and Bojan Karlas and Karl Aberer, *The Curious Case of the PDF Converter that Likes Mozart: Dissecting and Mitigating the Privacy Risk of Personal Cloud Apps*,

https://petsymposium.org/2016/files/papers/The_Curious_Case_of_the_PDF_Converter_that_Likes_Mozart__Dissecting_and_Mitigating_the_Privacy_Risk_of_Personal_Cloud_Apps.pdf