COP-MODE (COntext-aware Privacy protection for MObile DEvices)

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Ever wondered where all the data you put up on the Internet goes?

Do you know how much it is worth?

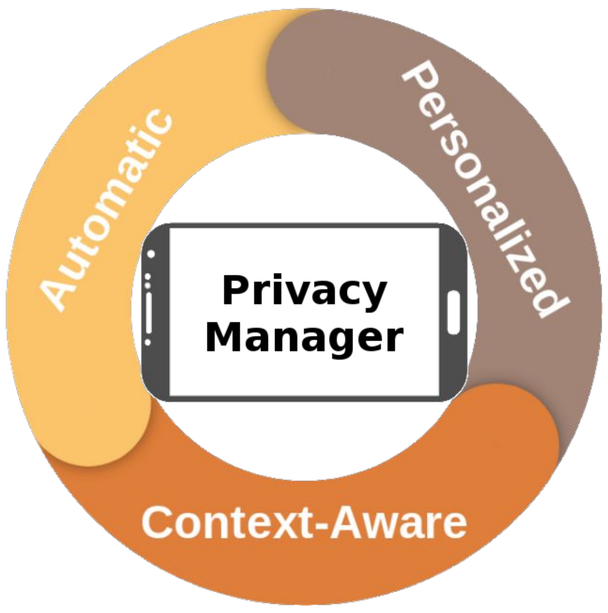
> In the age of information technology, smart devices are an ubiquitous utility.

> Sensing everything and everywhere led to the rise of beneficial user-tailored services.

> **However,** this constant flux of data poses a serious threat to **privacy!**

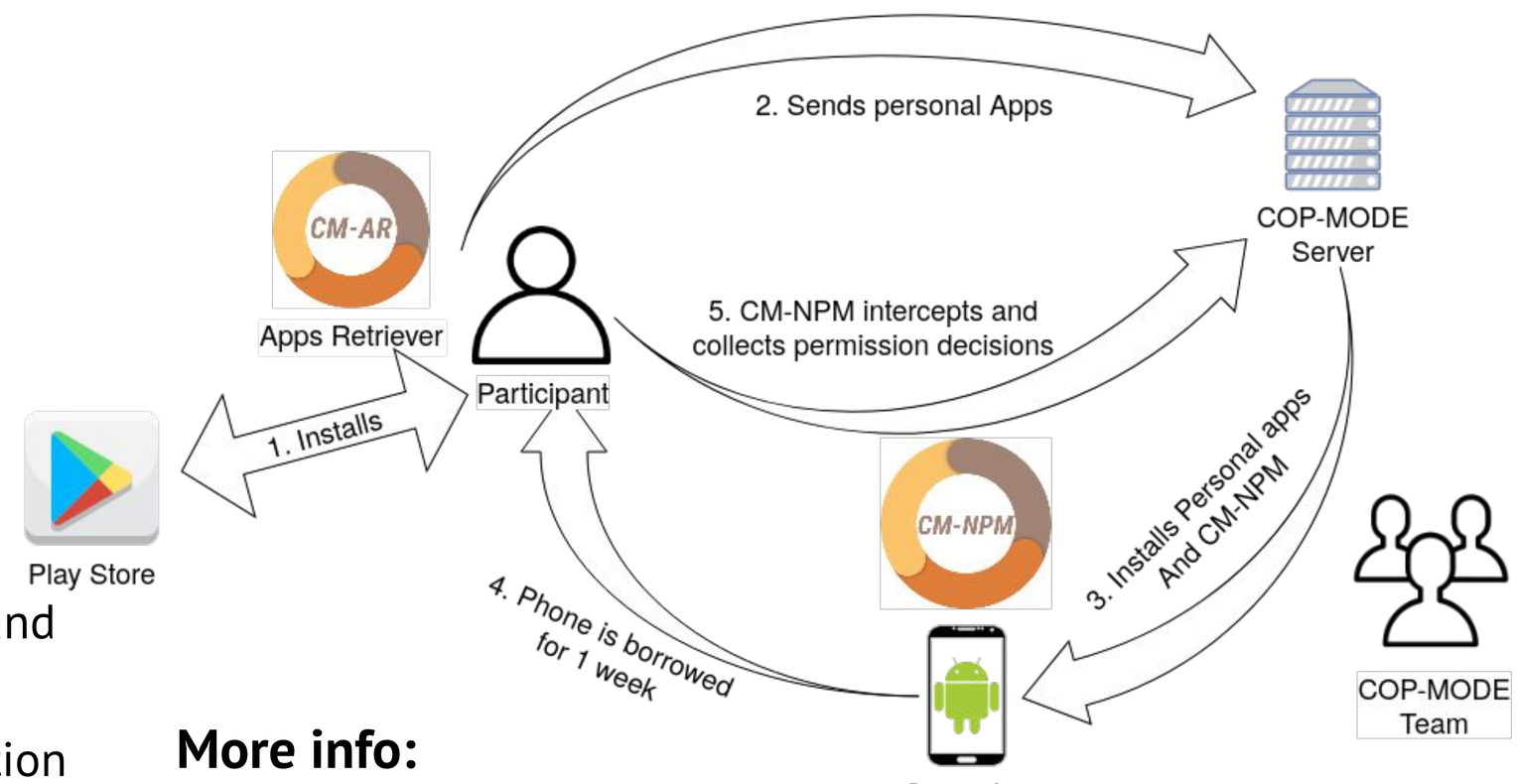
How to balance **privacy** and **utility**?

Solution



- **Automation** to avoid warning fatigue and intrusiveness
- **Personalization** to take into consideration users' preferences
- **Context-awareness,** to respect users' contextual preferences (e.g. more strict privacy at home than when shopping)

Campaigns Methodology



More info:

https://cop-mode.dei.uc.pt

Results

> 93 participants in campaigns using our smartphones, 65k+ privacy preferences gathered:
  -> Approximately 35 permission requests per hour
  -> 66% of requests come from background running apps (**invisible** to the user)

> **33% of all requests are denied** by users. A ratio that strongly varies depending on the permission, app and context

> Nearly **50% of requests are unexpected by the user**:
  -> Users **grant 90% of expected requests** and only 38% of unexpected
  -> **15% of requests denied by our participants would be allowed** by regular permission managers

> Privacy decisions **can be predicted** with an F-Score and ROC AUC of approximately 0.8

> Clustering users in groups of privacy like-minded individuals **increases prediction** F-Score and AUC to over 0.9.

References

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[3] B.Liu, M.S.Andersen, F.Schaub, H.Almuhimedi, S.Zhang, N.Sadeh, A.Acquisti, and Y.Agarwal, "Follow my recommendations: A personalized privacy assistant for mobile app permissions," Symposium on Usable Privacy and Security, 2016.