A COLLECTIVE AWARENESS PLATFORM FOR PRIVACY CONCERNS AND EXPECTATIONS: CAPRICE IN THE MAKING

July 2018

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Privacy and new technologies

- New “smart” devices
  - IoT, connected cars, smart phones, smart watches, smart TVs, baby monitors, …

- Consumers generally unaware of the data being accessed and/or transmitted by their devices

The Wall Street Journal: the examination of 101 popular smartphone apps revealed that:
- 56 apps transmitted the phone’s unique device ID to other companies without users’ awareness or consent
- 47 apps transmitted the phone’s location in some way
- 5 sent age, gender and other personal details to outsiders
Terms of Service (ToS)

- ToS documents
  - Lengthy
  - Hard to read/understand
  - Change often

- Real versus digital world
  - Different behaviour with regards to privacy

[https://www.youtube.com/watch?v=xYZtHIPkTQg](https://www.youtube.com/watch?v=xYZtHIPkTQg)

FoxNews: 7,500 online shoppers sold their souls to an online game company on April fool's day 2010
Purple: 22,000 users agreed to 1,000 hours of community service (including cleaning animal waste and relieving sewer blockages) in exchange for free wifi
NCC: reading ToS for an average Norwegian would take 32 hours (250,000 words)

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The power of data

- The “big data” era
  - Lots of data, and the ability to process them
    - Machine learning, deep learning, data science
  - Hidden correlations
    - Predict epidemics, personalized medicine, ...
    - But also personality identification, identifying habits and personal preferences, vote manipulation, ...

Bloomberg: smart meters can profile homes and habits, including what you watch on TV (via device profiling of energy consumption)
Personality identification: online services can analyze your personality based on authored text
ApplyMagicSauce: can tell your personality from facebook/twitter posts
Vote manipulation: allegations that Cambridge Analytica and other big data companies used targeted micro-advertising and personalized emotional triggers to help in the success of the Brexit and Trump campaigns

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The role of legislation

- Legal frameworks exist (GDPR included)
  - Limiting what can be collected and for what purpose
- Top-down versus bottom-up
  - Fast technological evolution
    - Moving target, too fast for legislators
    - Policy making is a few steps behind technology
  - For a lasting effect, people’s attitude has to change through awareness

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Data-centric business model

Many companies earn money out of users’ data

- Personal data: currency for “free” products/services
- A novel, lucrative and very successful business model
Non-awareness leads to carelessness

- Awareness can prevent or mitigate privacy threats

Leverage the forces of the market

- Awareness can lead the public to more privacy-respecting products or services
  - Or maybe not, in which case we are fighting the wrong cause
- Respect for privacy can be a competitive advantage
The plan for our socio-technical solution

1. Build a community of privacy-sensitive individuals
   - Social networking, web site, promotional video, …
2. ICT tools to support collaboration and awareness
3. Awareness will lead to change in consuming habits
4. The market will adapt
5. Legislators and policy-makers will follow
CAPrice: solution architecture
ToS Annotator
Understanding apps’ behaviour
Privacy preferences
Dashboard
Thank you for your attention

- **CAPrice website**
  - [https://www.caprice-community.net/](https://www.caprice-community.net/)

- **CAPrice promotional video**
  - [https://www.caprice-community.net/idea/](https://www.caprice-community.net/idea/)

- **Digital versus physical world video (Norwegian Consumer Council)**
  - [https://www.youtube.com/watch?v=xYZtHIPktQg](https://www.youtube.com/watch?v=xYZtHIPktQg)

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