

Usable transparency with the Data Track

A tool for visualizing data disclosures

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Motivation

Today, it is practically impossible to keep track of all the traces of personal information that we leave in our daily online activities. At the same time there is a lack of transparency about the way that online services handle and share our data.

Usable transparency-enhancing tools are needed to inform users about how their data is used and shared online.

The Data Track tool

- A transparency-enhancing tool that provides users with an overview of the data that they have disclosed to different online services. Allows users to check and exercise control of the information about them that is stored at a service.
- These functionalities are possible given that online services adopt technologies for accountability and transparency, such as the results from initiatives like the Cloud Accountability project (www.a4cloud.eu).

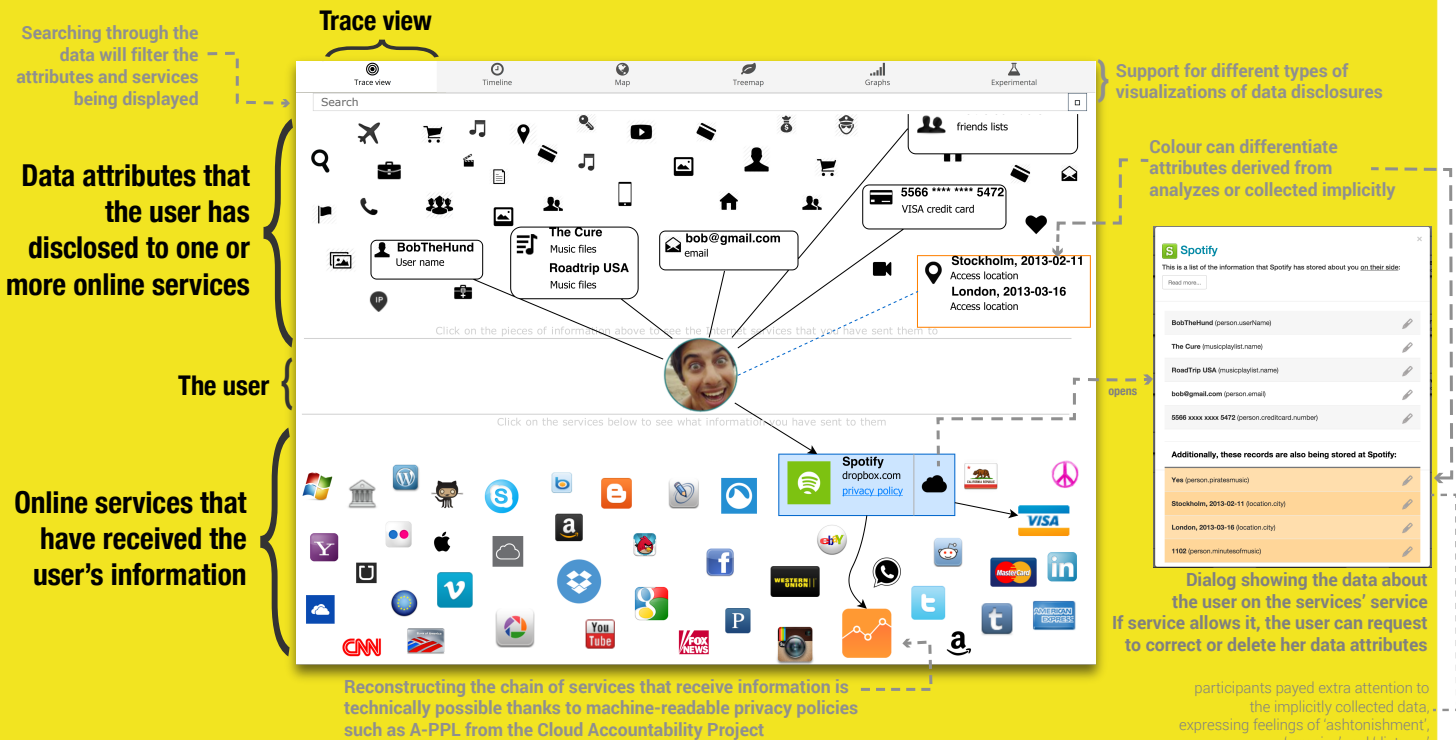
The trace view visualization

Designed to support two main use cases:

What information have I sent to which online services?

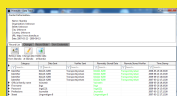
What information do online services have about me now?

The user is represented by a profile picture in the middle of the screen. The top panel displays personal data attributes that have been disclosed to the different online services which are displayed in the bottom panel. By clicking in one (or many) of the services at the bottom, the interface shows a *trace* from the service to the user, and then from the user to the data attributes that she has released to that specific service. Clicking on a data attribute at the top shows a trace to the online services that have such attribute. Clicking on the services' cloud icon opens a dialog where users can review and request correction or deletion of data attributes stored at the services' side.



Iterative design process

Table listing disclosures (PrimeLife Project)



Lo-fi prototypes with Balsamiq



Interactive prototype with several rounds of user and expert evaluations



Hi-fi prototype considering data scalability and users cognitive capabilities

User evaluations

- + Understandable traces of which data had been sent to whom.
- + Playful and intuitive interaction with the UI elements.
- + Data perceived under users' control.
- Low affordance on how to access data on the services' side.
- Hard to understand the security and privacy properties of the Data Track.
- There is a need for categorizing the data and ranking services.

