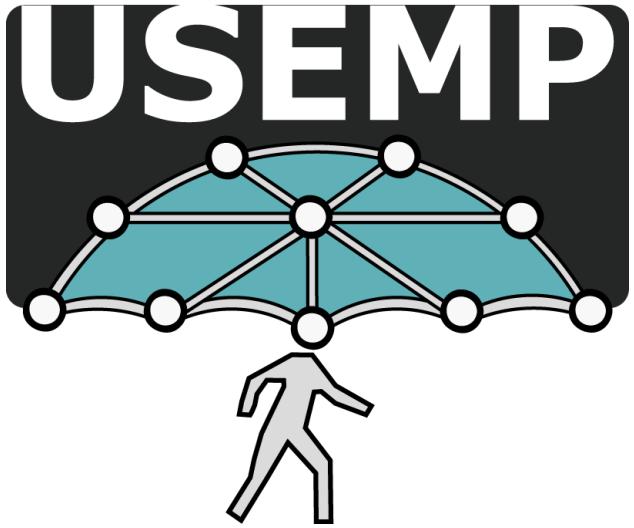

iMinds

Increasing transparency & privacy for Online Social Network users

USEMP value model, scoring framework & legal

A.Popescu, M. Hildebrandt, J.Breuer, L. Claeys, S.Papadopoulos,G.Petkos, T.Michalareas, D.Lund, R.Heyman, S.van der Graaf, E.Gadeski, H. Le Borgne, K.deVries, T.Kastrinogiannis, A.Kousaridas

Luxembourg, 07/10/2015

Annual Privacy Forum 2015

Laurence Claeys

SEVENTH FRAMEWORK PROGRAMME

Radboud University Nijmegen

iMinds
CONNECT.INNOVATE.CREATE

LULEÅ TEKNISKA UNIVERSITET

cea list

CERTH THE CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

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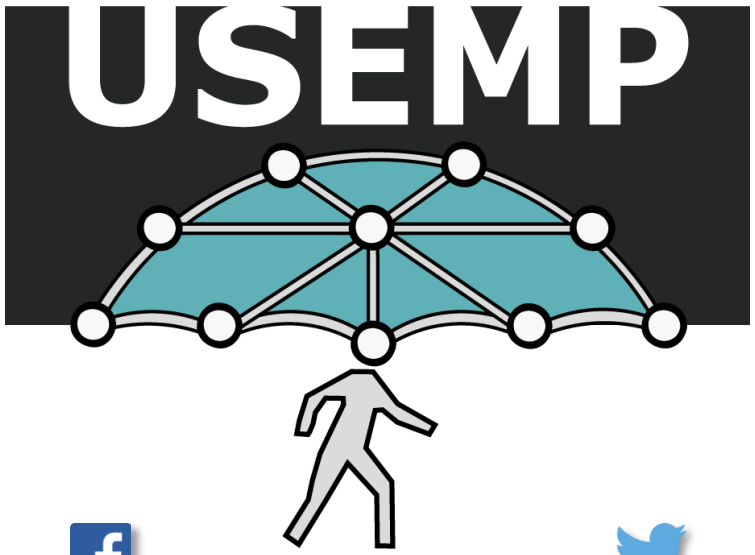
HWCommunications



usemp project

@usemp

usemp-project.eu

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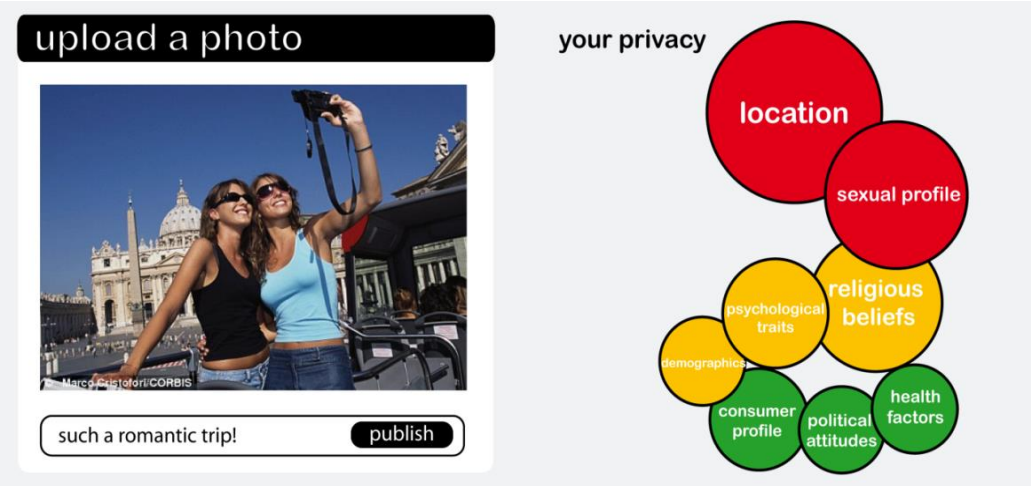
User Empowerment for Enhanced Online Presence Management

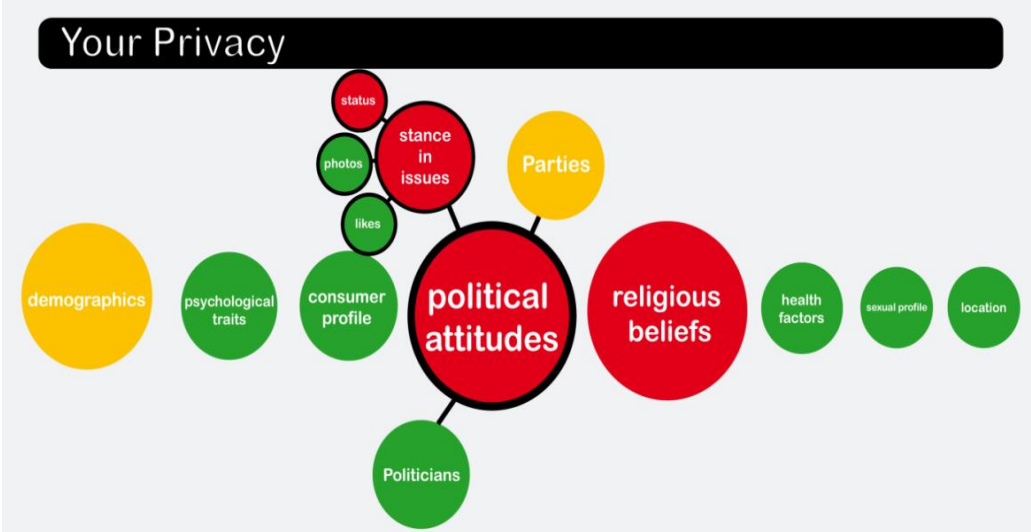
USEMP is partly funded by the European Community's Seventh Framework Programme

Use cases: user privacy & data value awareness

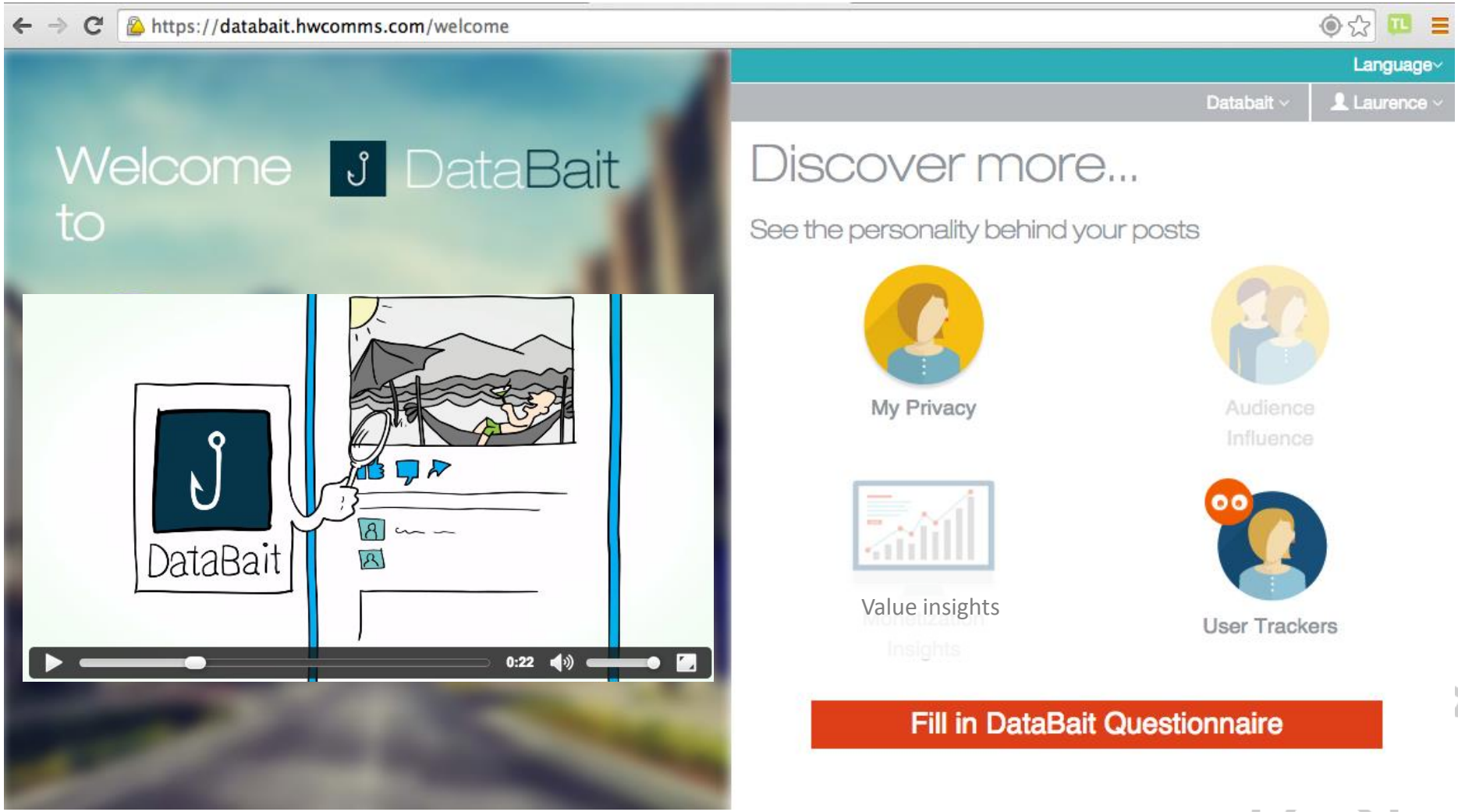
- Real-time & long term privacy management



- Data value feedback & Audience influence



Databait


https://databait.hwcomms.com/welcome
Welcome to DataBait
DataBait
0:22
Language
Databait
Laurence
Discover more...
See the personality behind your posts
My Privacy
Audience Influence
Value insights
User Trackers
Fill in DataBait Questionnaire

USEMP legal, business & technical implementations

Legal:

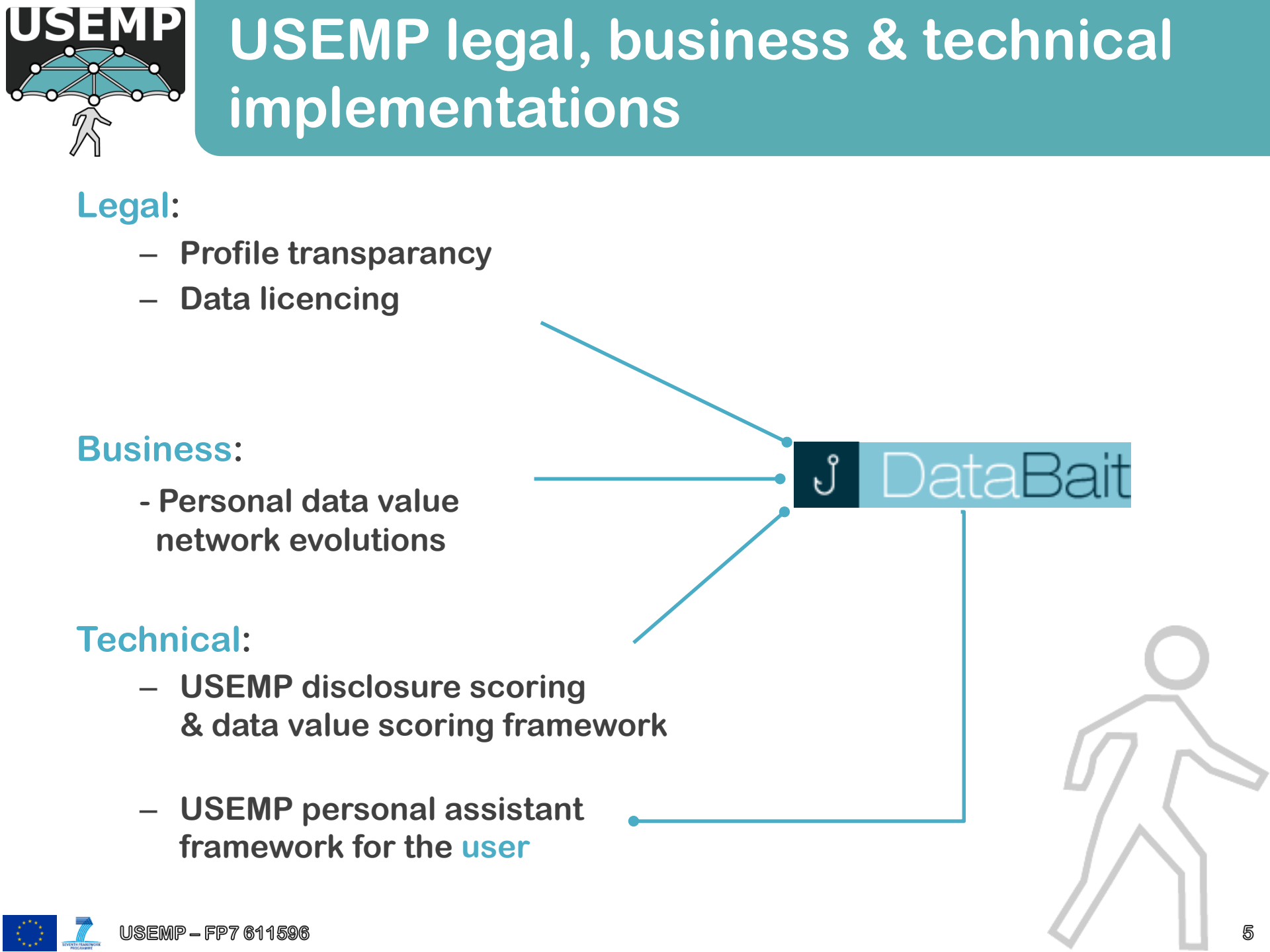
- Profile transparancy
- Data licencing

Business:

- Personal data value network evolutions

Technical:

- USEMP disclosure scoring & data value scoring framework
- USEMP personal assistant framework for the **user**

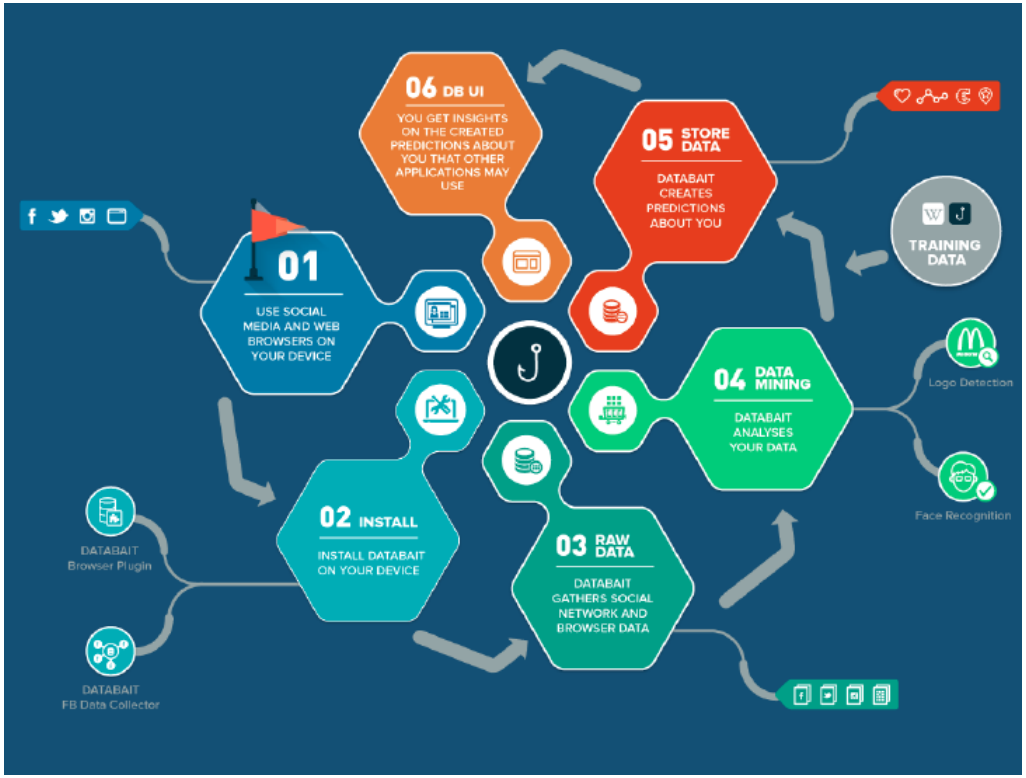


USEMP: Legal angle

- Current and upcoming legal framework
- Legal implications for information-driven applications?
  - Prohibited forms of profiling and profile transparency
    - Profiling in the DPD: automated individual decisions (art. 15) and right of access (art. 12a)
    - Profiling in proposed GDPR (art. 20, 14(ga)(gb))
  - Other relevant DP requirements
    - DPD/GDPR, ePrivacy Dir
    - Data minimisation, purpose limitation, sensitive data, access & consent withdrawal, security
    - Legal ground for legitimate data processing
      - Performance of a contract (art. 7b DPD)
      - Consent (sensitive data: art. 8 DPD)

Data Protection by Design in practice

- Profile transparency tools
- Data protection by design and by default (art. 23 GDPR)
- Data protection by design will be legal requirement
- USEMP tools as example



Legal double bind

- USEMP as a tool for “data protection by design”
  - Focus on profile transparency, not on data minimisation
- USEMP as a subject of data protection law
  - Legal ground for processing & processing of sensitive data; purpose specification & use limitation, access & consent withdrawal rights, security,…;
  - Research purpose >> future purpose?
- USEMP risks infringing fundamental rights by examining whether OSNs are infringing fundamental rights

USEMP contracts: Personal Data Processing Agreement & Data Licence Agreement

What did you sign-up for when you signed up for DataBait? The DataBait Contracts

What happens to your personal data and how are they handled? We, the partners of the USEMP consortium control what happens to the personal data you provide us when you use DataBait. We have signed a contract with each other to make sure that we handle your personal data in a fair and transparent way, in accordance with the law. This contract is called the Personal Data Processing Agreement. You can see it here. It specifies exactly the role of each USEMP partner in the processing of your data. We are bound by this agreement and handle your personal data in accordance with it. Part of what we agreed to is that we sign a contract with each individual DataBait user and that we only process your data based upon and in accordance with this mutual agreement. Please have a look at the PDPA here.

Get Personal Data Processing Agreement

What do you sign-up for when you signed up for DataBait? This service contract between you and the USEMP consortium specifies the terms of service for using DataBait. We call it is a Data Licensing Agreement because in exchange for using DataBait you license us to use some of your personal data, including some of your sensitive personal data. In the Data Licensing Agreement we specify exactly why we process your data (the scientific purpose), for how long we keep your data, how to rquest the removal of your sensitive data, etc. Please have a look at the DLA here.

View Data Licence Agreement **Get Data Licence Agreement**

USEMP Data License Agreement

USEMP Data License Agreement

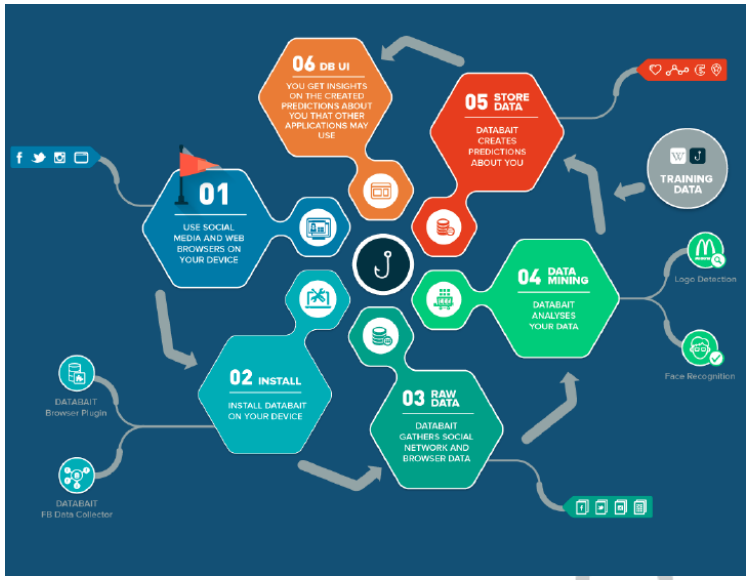
The parties:
(1) You, participant of the USEMP research project & user of the DataBait platform and services

(2) [CEA-France / iMinds-Belgium / CERTH-Greece / HWC-UK / LTU-Sweden / VELTI-Greece / SKU Radboud Univertity-Netherlands], provider of the USEMP platform and services, joint data controllers, from hereon called 'USEMP Consortium partners'.

Hereby agree:

(B) You license the use of Your volunteered and observed personal data by the USEMP consortium partners, as gathered by the the DataBait-Facebook app and the DataBait web browser plug-in for the sole purpose of scientific research and – within that context – to provide You through the DataBait graphic user interface (GUI) with information about what third parties might infer based on Your sharing of information, and on Your online behaviour. The said data may be combined with publicly available personal data gained from other sources to infer more information about Your habits and preferences (inferred data).

Back | Continue Reading



USEMP: Business angle

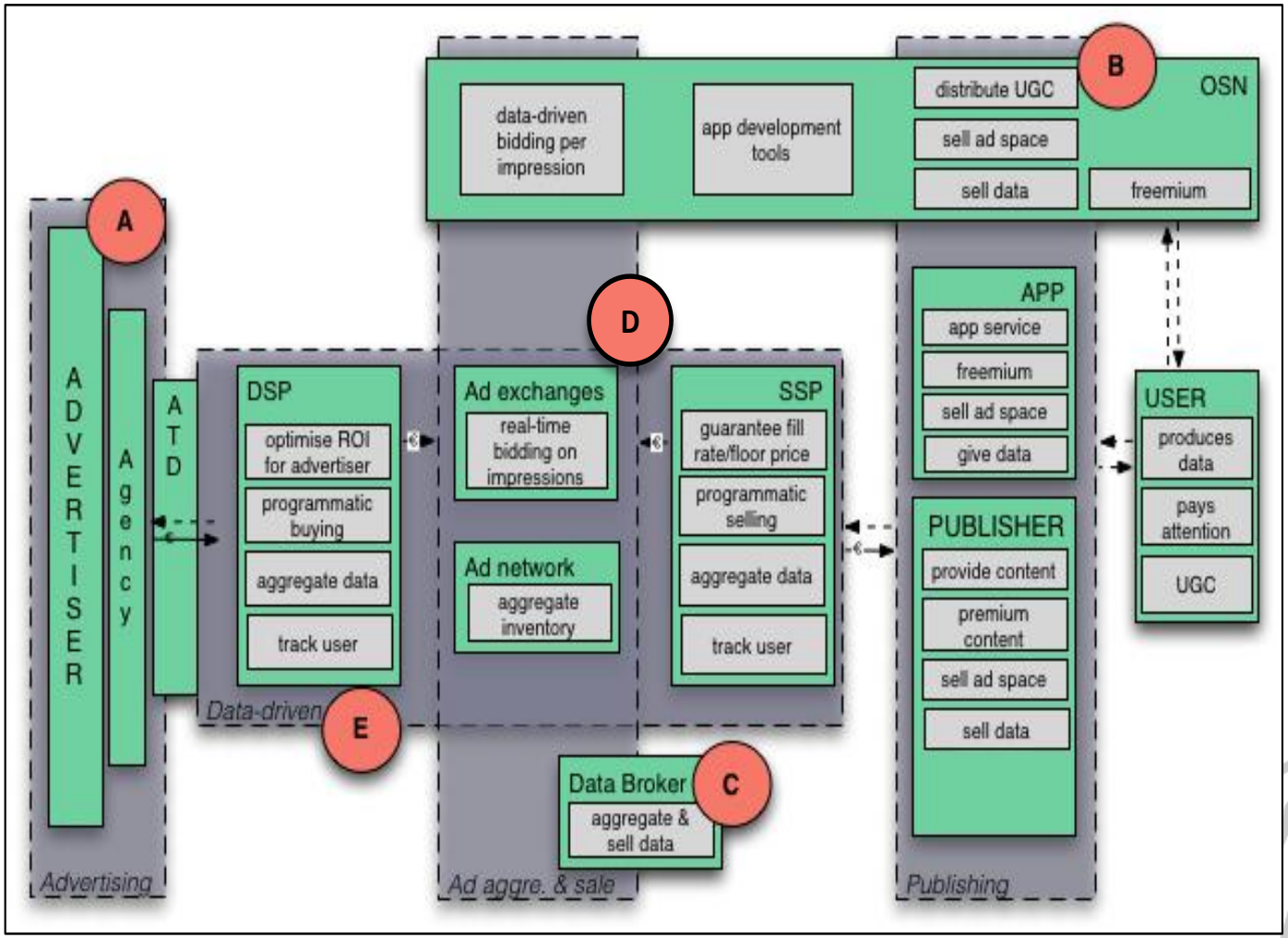
How can USEMP tools (or alikes) be established to actually support users in their providing of personal data, **while being economically and strategically viable** for businesses?

a) **What is the' value' of personal data?**

b) **What are mutual benefits of companies and users that can arise through USEMP alike tools?**

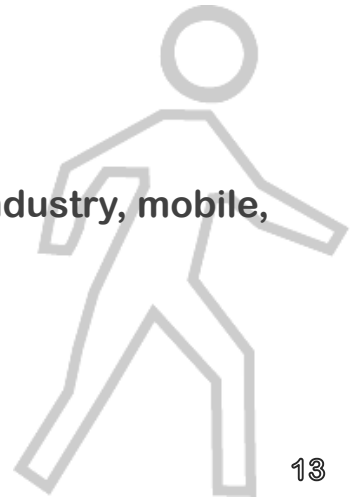
c) **Where in the value network should the USEMP tools be located?**

The Value Network



Semi-structured expert interviews

- K.Zorbas - Director at the Digital Business Consultancy Group.
  - Before CEO and Vice President for IAB Europe.
- C.Payne - Public Affairs Manager at World Federation of Advertisers.
  - Global organization representing marketers and advertisers.
- L.Brusselmans - Marketing & Communication Manager at Engagor.
  - social media management tool
- R.Siebelink - Head of quality, productivity, best practice of Rocket Fuel.
  - Programmatic Buying Platform, machine learning
- T.Michalareas of Velti.
  - Mobile Marketing and Advertising
- J.Frijters - Co-founder and CEO of ImproveDigital.
  - European provider of independent publisher monetisation technology.
- N.Baarsma - Co-founder and CTO of Yieldr
  - demand side platform and programmatic buying solution provider.
- M.van Lommel - Technical Sales Engineer at Be-Mobile
  - Provider of traffic and mobility content and services for the automotive industry, mobile, media and government road operators.
- J.Roelandts - COO at Twoo.
  - Social Network, dating



Initial insights

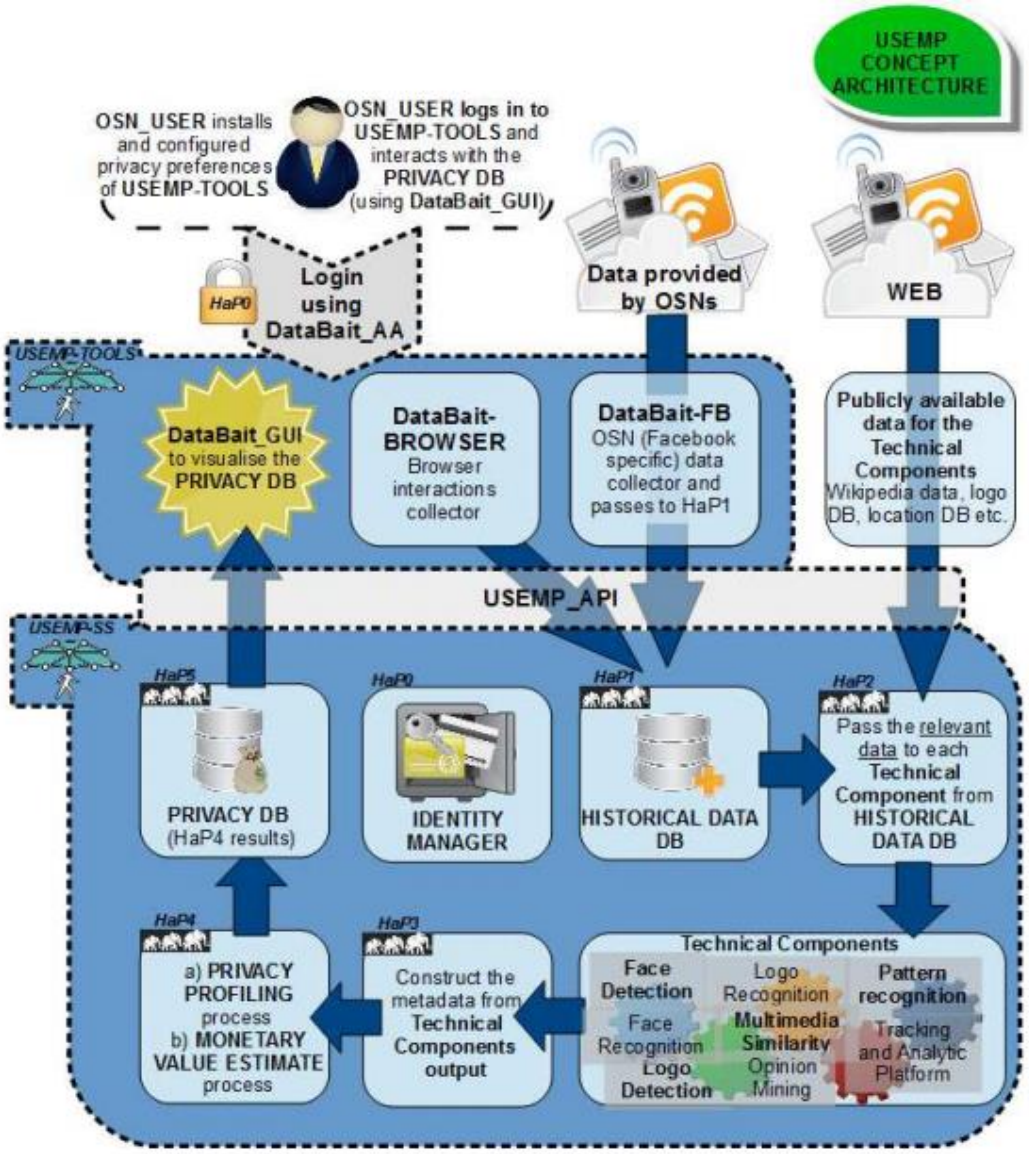
- Bipolar Value Network with strong interdependencies
- OSNs are disruptive, overtaking roles from other actors
- Integral actors “in the middle”
  - Use of data with no direct contact with user
- The whole ecosystem and each actor depends on data
- Data only works at scale for automation
- Pseudonomised data is sufficient for most operations

- No trust between actors
- Low data quality
- No transparency

http://www.usemp-project.eu/documents/deliverables/

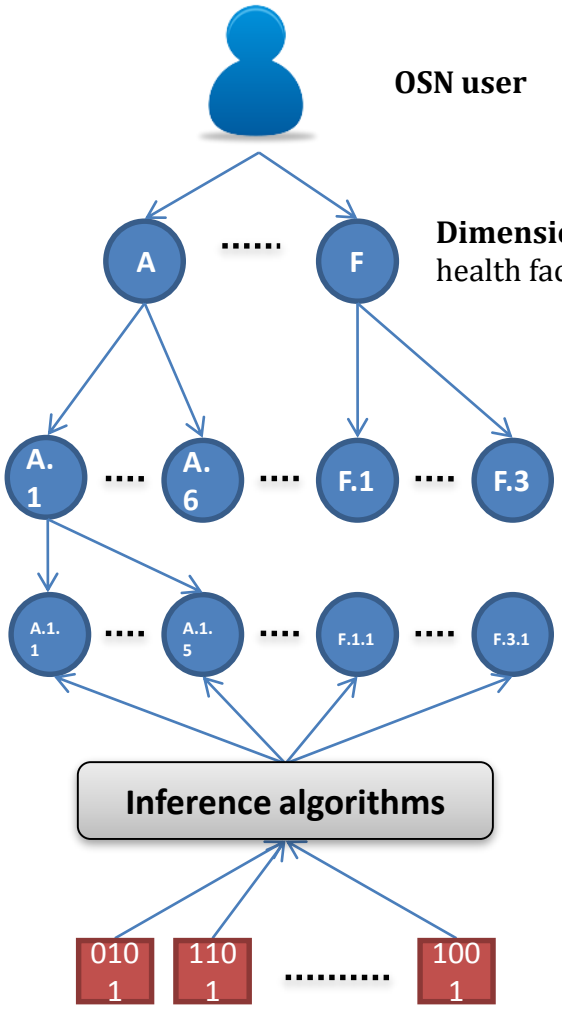
USEMP: Technical & user angle

- USEMP personal assistant framework for the user
- USEMP disclosure scoring & data value scoring framework



Privacy scoring framework

Name	Description	Threats-Sensitivity	Value (for advertisers)
Demographics	Personal data, such as Gender, Age, Nationality, Ethnic background, etc.	Discrimination in a variety of settings. The most frequently used type of information.	**High**
Psychological Traits	Defined by psychologists (extraversion, openness, etc.)	Discrimination, e.g. in personnel selection	**Low**
Sexual Profile	Relationship status, preferences, habits	Discrimination, e.g. in workplace, education, housing	**High**
Political Attitudes	Supported politicians, parties and stance	Discrimination, e.g. in workplace or personnel selection	**High**
Religious Beliefs	Religion (if any) and beliefs	Discrimination, e.g. in the sale or rental of housing, job selection, workplace.	**Moderate**
Health Factors & Condition	Habits (e.g. smoking, drinking), medical conditions, disabilities, health factors (exercise)	Discrimination, e.g. health insurance denial or discriminatory pricing.	**High**
Location	Characteristic locations of the individual and history of previous locations	Discrimination, e.g. house insurance, stalking	**High**
Consumer Profile	Preferred products and brands	Ad targeting and discrimination in online price-setting	**High**



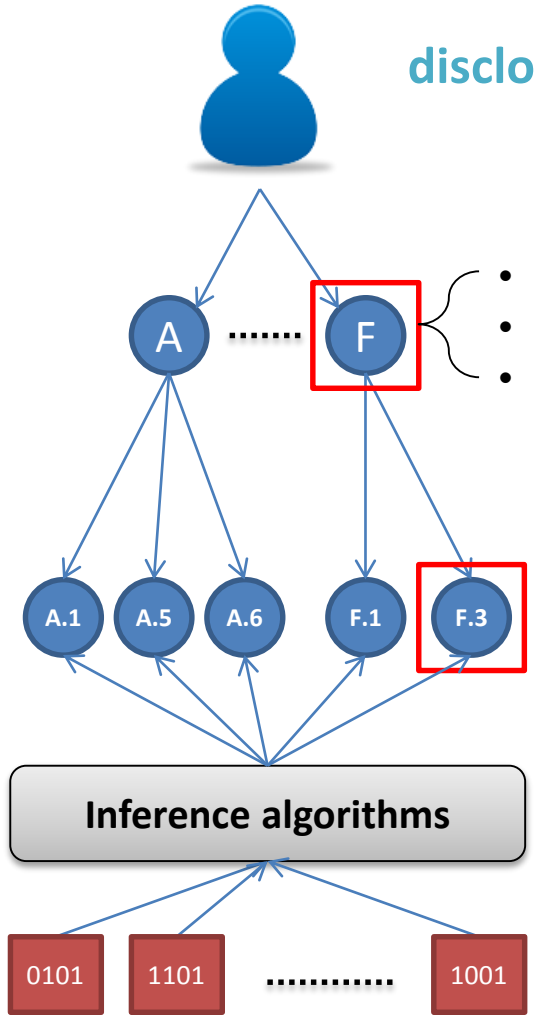
Dimensions (e.g. demographics, health factors and condition, etc.)

Attributes (e.g. sex, age, smoking, etc.)

Values (e.g. male, 20-25 years old, smoker, etc.)

volunteered + observed data (URLs, likes, posts, interactions)

Disclosure scoring & data value scoring framework



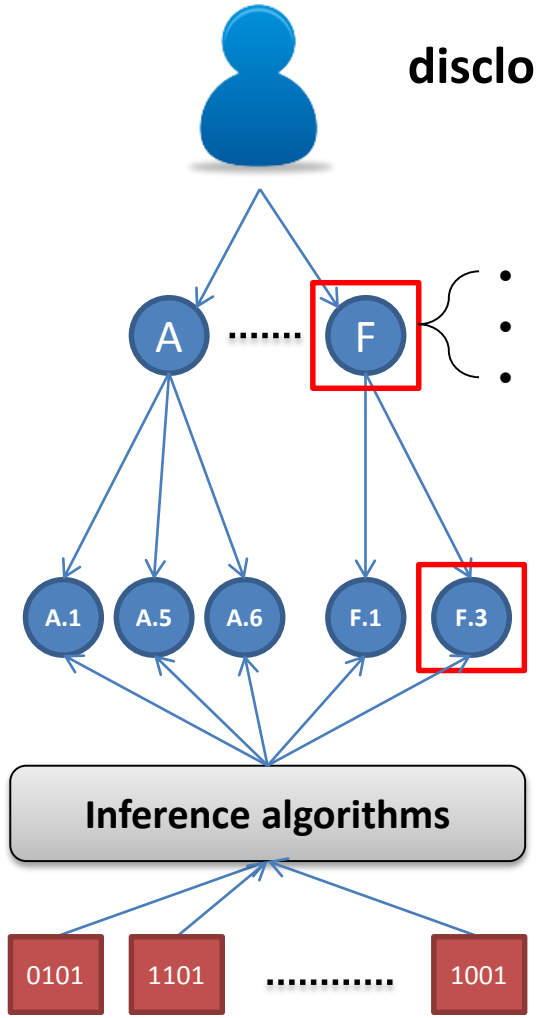
disclosure scoring & data value scoring framework

- Privacy Score
- Reach of Disclosure
- Monetary Value Indicators

- Value / Predicted Value
  - Confidence of Prediction
  - Level of Sensitivity
  - Support
  - Reach of disclosure/visibility
  - Level of control

volunteered + observed data
(URLs, likes, posts, interactions)

Disclosure scoring & data value scoring framework



disclosure scoring & data value scoring framework

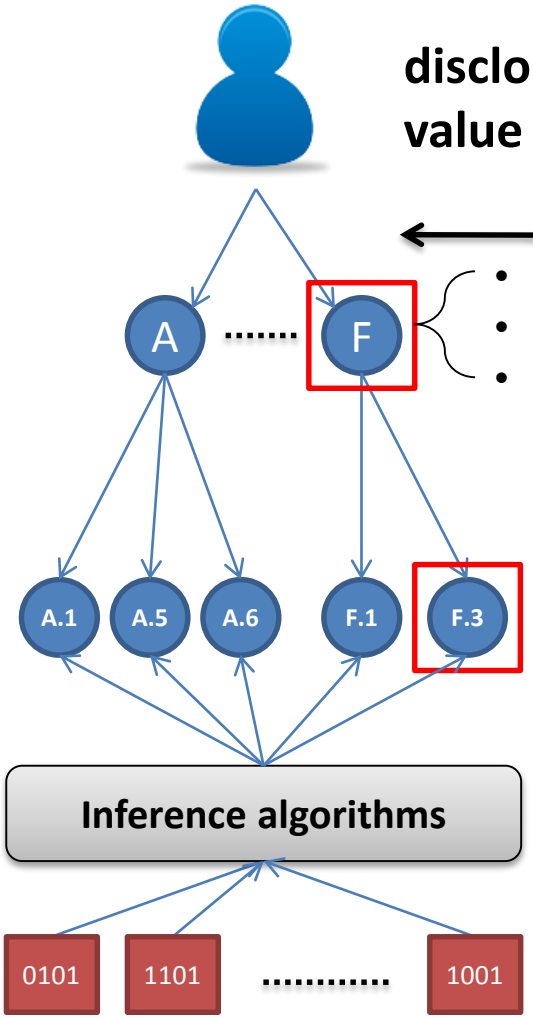
- Privacy Score
- Reach of Disclosure
- Monetary Value Indicators

Indicators related to Monetary Value

1. **User influence I** is based on following parameters :
   - number of objects (i.e., picture/video/post) that a user has created
   - number of first-hop & second-hop friends
   - total number of first hop & second hop friends that had an action on each object (i.e., picture/video/post)
   - type of action (i.e., share, like, comment) of user j on the object i
2. a measure of the **importance of an object M**

Data value V =I·M

Databait Framework



disclosure scoring & data value scoring framework

personal assistance framework/applications

Disclosure Score Control

- Privacy Score
- Reach of Disclosure
- Monetary Value Indicators

Audience Management

- Value / Predicted Value
  - Confidence of Prediction
  - Level of Sensitivity
  - Support
  - Reach of disclosure/visibility
  - Level of control
- Indicators related to Monetary Value (audience metrics, OSN interaction metrics)

Groups | Communities

Data Value Visualization Framework

Privacy Policies

Rules | Data-driven | Social

volunteered + observed data (URLs, likes, posts, interactions)

DataBait

Steven

An overview of your online privacy profile

The information presented on this page represents our interpretation of your 'privacy profile'. This profile is generated based on your social network activity and shared images and is divided into a number of different categories.

The meaning of the bubble visualisation

The 'bubble' visualisation is designed to show you the level of exposure of the different categories of your privacy profile.
The size and colour of the bubble indicates the level of exposure.
Large bubbles indicate a more exposed category.
Red bubbles are more exposed than green bubbles.
Clicking on the bubbles provides more detailed information about that category.

More

ge Leaks

drug use

smoking

disabilities

ealth
ctors

text

drinking

chronic
diseases

images

religious
beliefs

sexual
profile

political
attitudes

consumer
profile

explore more
image leaks?

DataBait

Steven

What potential privacy leaks are caused by your photos?

Your photos hold the potential to expose some private information about you. It is the purpose of this page to show you what potential information can be inferred from your photos

The meaning of this visualisation

This visualisation presents your photos in a way that enables you to see if there is potentially privacy violating information that can be gleaned from it.
An image with a red border is one that potentially exposes too much information about you.
A green border means that this image doesn't expose much information about you.

More

My Privacy

Overview Friends Location Leaks Image Leaks

keywords

drunkard

beer drinker

cafe

brasserie

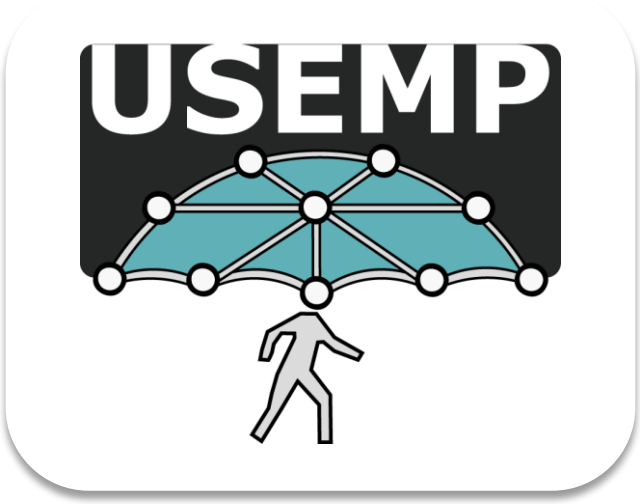
beer hall

What parts of your privacy profile are affected?

consumer profile

health factors

Photo: Some Beers



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