Privatheit in einer digitalisierten Welt?

Ringvorlesung Digitalisierung

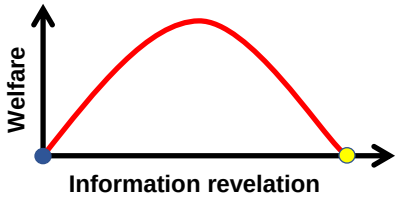
Prof. Jens Grossklags, Ph.D.

Lehrstuhl für Cyber Trust
Fakultät für Informatik
Technische Universität München

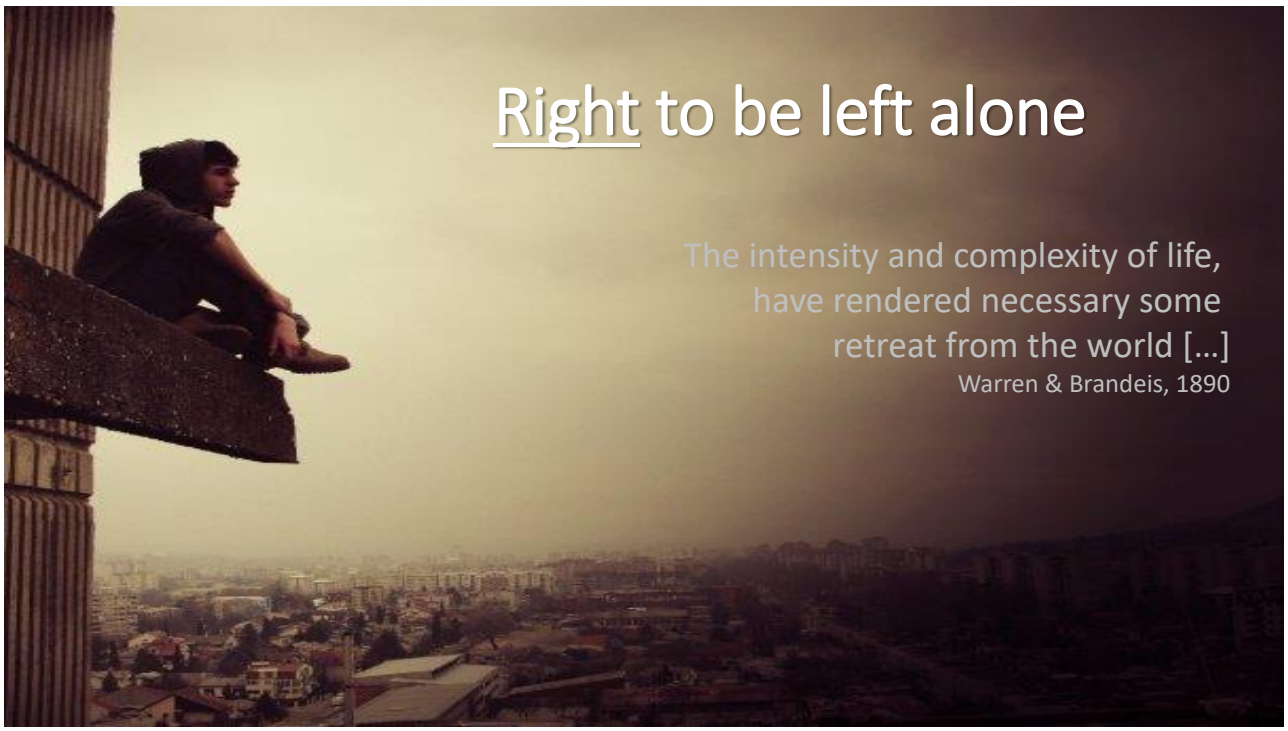
What is Privacy? How much do we need?

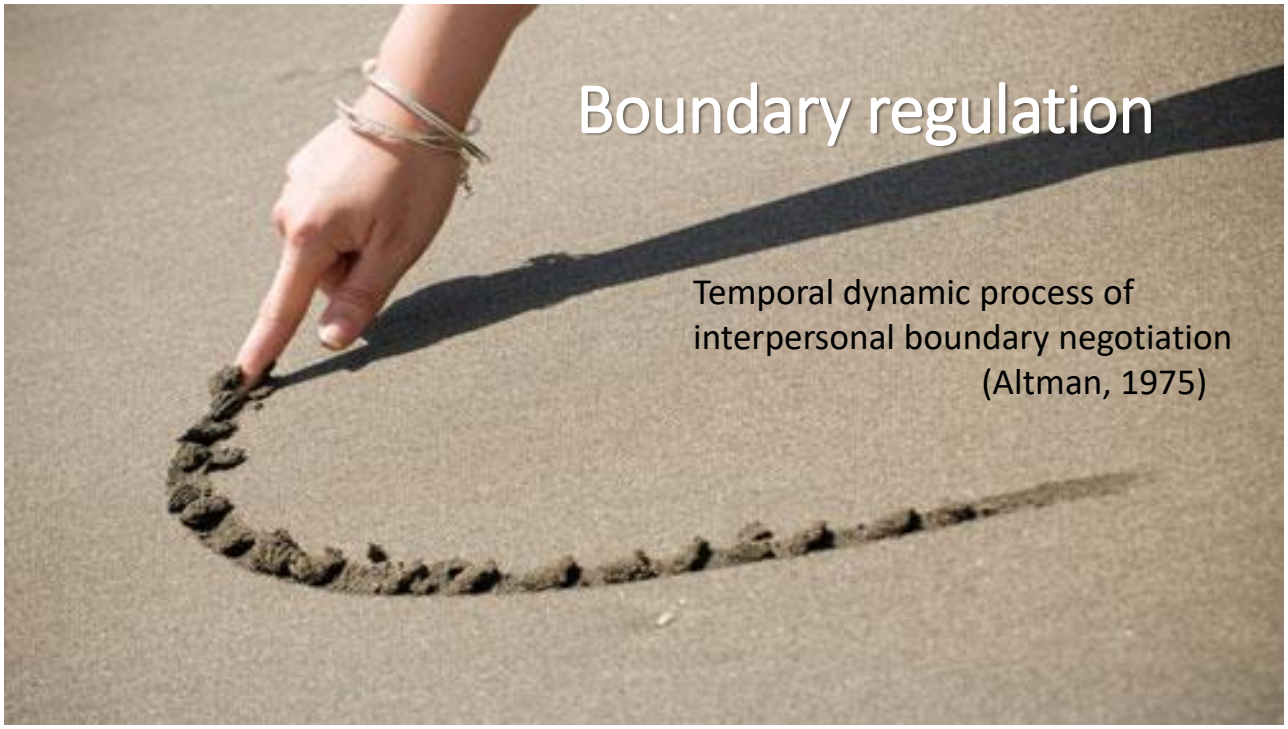
- Multifaceted concept

- Selection of definitions (Survey data)
  - Ownership of and control over personal information (90%)
  - Personal dignity (60%)
  - Freedom to develop (50%)
  - Ability to assign monetary values to each data flow (26%)



Nuanced theories have emerged over time.





But where are we heading towards?


Personal data is the new oil of the internet and the new currency of the digital world.
Meglena Kuneva (2009)


*Consumer rights must adapt to technology, not be **crushed** by it.*
Meglena Kuneva
European Consumer Commissioner (2009)

Or to paraphrase:

We must adapt?

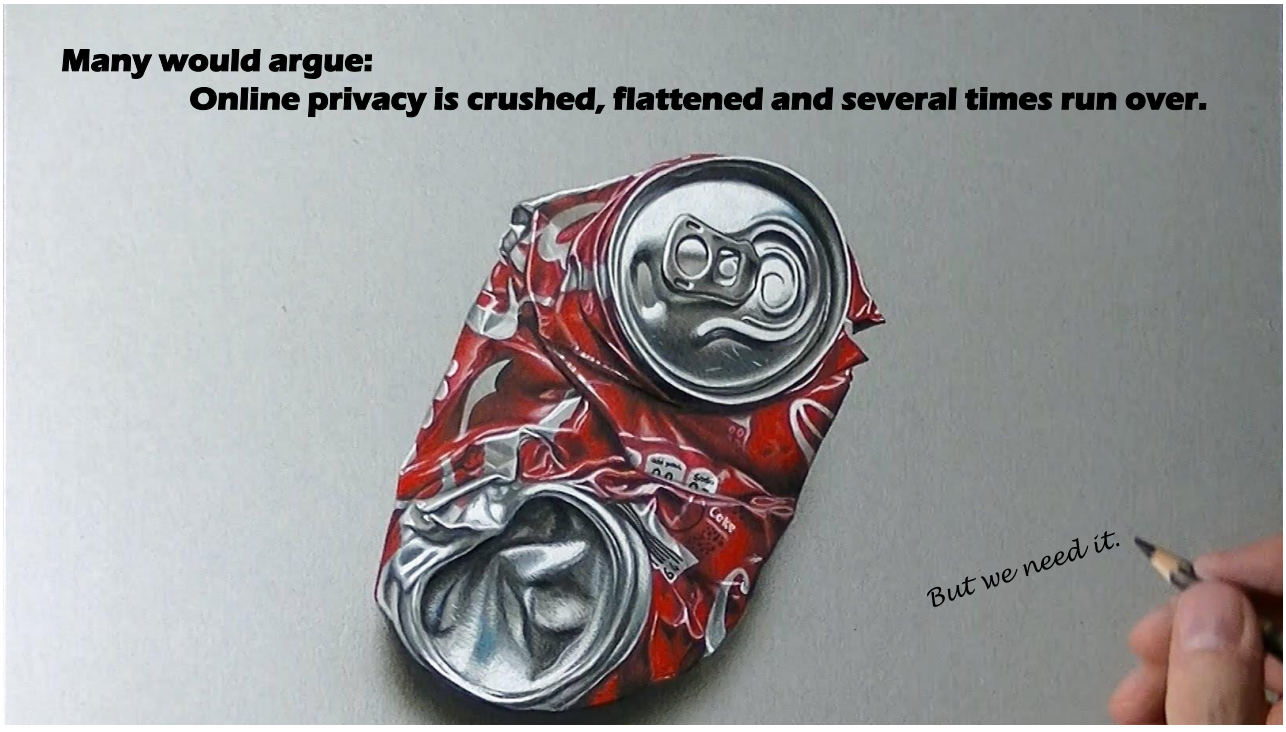
Moving towards the U.S. standard of *reasonable privacy expectations*?

Two-part legal test:

- "Subjective": Person asserting that a search was conducted must show that they kept the evidence in a manner designed to ensure its privacy
- "Objective": Would society at large deem a person's expectation of privacy to be reasonable?

Unfortunate realization: The more knowledge in society about privacy-invading technologies in society, the less "objective" expectation!

What is reasonable to assume nowadays?



Example: Online Tracking

Table 1. Top 20 sites with the most connections to third-party domains on 100 sites tested

First Party Domain	Run1	Run2	Run 3	Run 4	Average
timesofindia.indiatimes.com	102	156	166	65	122.25
bbc.co.uk/news	108	81	107	88	96
weather.com	69	150	109	12	85
wowhead.com	106	63	73	90	83
pcgamer.com	67	83	81	94	81.25
bbc.co.uk/sport/o/football	95	112	63	44	78.5
time.com	97	86	72	57	78
goal.com	169	59	33	50	77.75
foxnews.com	109	78	86	38	77.75
huffingtonpost.com	121	77	51	56	76.25
usatoday.com	109	87	59	43	74.5
nbcnews.com	42	97	73	84	74
thesaurus.com	67	55	43	122	71.75
forbes.com	108	106	—[a]	72	71.75
sbnation.com	38	70	107	65	70
cbssports.com	48	67	82	72	67.25
reuters.com	76	78	54	60	67
walmart.com	38	40	95	84	64.25
nytimes.com	58	60	83	52	63.25
nhl.com	61	57	59	71	62

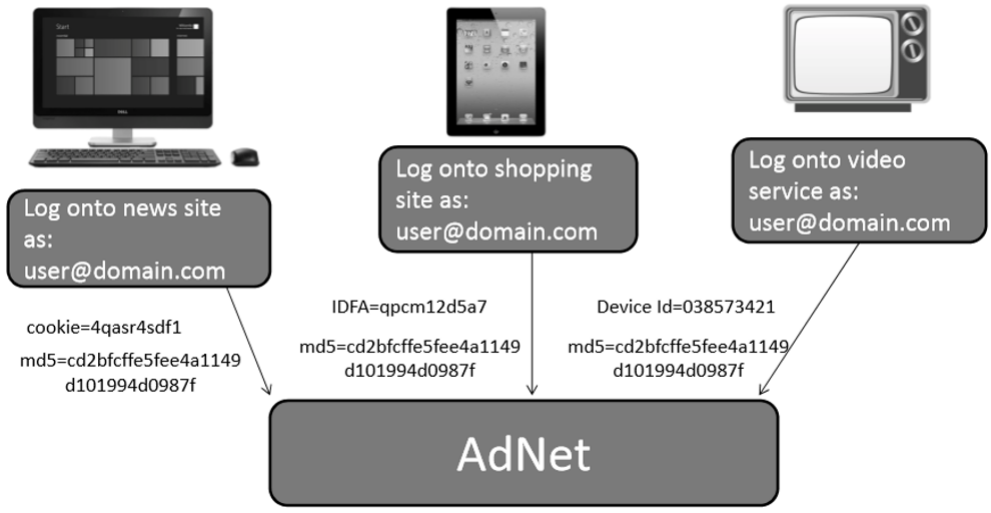
Table 2. Top 20 third-party domains with most connections from 100 sites tested

Third-Party Domain	Run1	Run2	Run3	Run4	Average
doubleclick.net	88	89	87	86	87.5
facebook.com	69	71	68	68	69
google.com	70	69	70	62	67.75
google-analytics.com	65	67	64	58	63.5
scorecardresearch.com	65	60	61	58	61
googlesyndication.com	62	63	58	58	60.25
adnxs.com	48	47	48	50	48.25
2mdn.net	48	49	44	46	46.75
gstatic.com	49	55	4	34	46
googleapis.com	47	54	38	43	45.5
cloudfront.net	46	48	44	41	44.75
yahoo.com	47	50	44	36	44.25
moatads.com	47	46	42	40	43.75
bluekai.com	44	45	40	39	42
twitter.com	43	41	40	32	39
advertising.com	35	41	42	37	38.75
rubiconproject.com	40	37	38	39	38.5
adsafeprotected.com	38	38	41	35	38
rlcdn.com	34	38	38	37	36.75
imrworldwide.com	37	39	38	32	36.5

Brookman et al.; PETS 2017 [Federal Trade Commission]

Example: Cross-Device Tracking

Matching across publishers using hashed identifiers



Brookman et al.; PETS 2017 [Federal Trade Commission]

Example: Addition of Data from Offline World

Google Attribution makes it possible for every marketer to measure the impact of their marketing across devices and across channels -- all in one place, and at no additional cost.

This includes visits that happen in multi-story malls or dense cities like Tokyo, Japan and São Paulo, Brazil where many business locations are situated close together.

Tuesday, May 23, 2017

Example: The user

Would It be OK or not OK if . . . (N=1,000)*

	OK (%)	Not OK (%)	Maybe/ DK (%)	Didn't Want Tailoring (%)	Not OK + Didn't Want Tailoring (%)
*these **ads** were tailored for you based on following*					
what you do on the website you are visiting.	24	7	3	66	73
what you did on *other* websites you have visited.	13	18	3	66	84
what you do *offline*—for example, in stores.	11	20	3	66	86
*these **discounts** were tailored for you based on following*					
what you do on the website you are visiting.	34	13	4	49	62
what you did on *other* websites you have visited.	18	29	4	49	78
what you do *offline*—for example, in stores.	18	29	4	49	78
*this **news** was tailored for you base on following*					
what you do on the website you are visiting.	25	14	4	57	71
what you did on *other* websites you have visited.	14	26	3	57	83
what you do *offline*—for example, in stores.	12	28	3	57	85

*See text for explanation. DK=Don't Know

Turow et al. Americans Reject Tailored Advertising and Three Activities that Enable It (2009)

Sondererhebung des Statistischen Bundesamts verdeutlicht aktives Selbstdatenschutzverhalten deutscher Internetnutzerinnen und -nutzer

28.03.2017

So hätten zwischen dem 1. Quartal 2015 und dem 1. Quartal 2016 63 Millionen Personen ab zehn Jahren in Deutschland das Internet genutzt und beispielsweise habe etwa die Hälfte davon nicht zugelassen, dass ihre Daten für zielgerichtete Werbung genutzt werden. Von denjenigen, die komplett auf einen Internetzugang verzichten, würden dies 19 Prozent der Personen aus Datenschutzbedenken tun. Die Studie zeigt außerdem, dass es in einzelnen Bereichen signifikante Unterschiede im Nutzerverhalten je nach Bildungs- und Beschäftigungsstand sowie nach Geschlecht gibt.

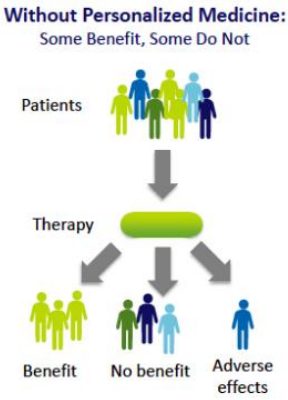
- 78% sind in irgendeiner Form “aktiv”, um sich zu schützen
  - 43% Datenschutz-erklärung gelesen
- Browsereinstellungen (cookies) = 46%
  - Fokus von Informations-Kampagnen
  - Nicht effektiv gegen umfangreiches tracking
- Anti-tracking software = 18%
  - Besser, aber Katz-und-Maus-Spiel

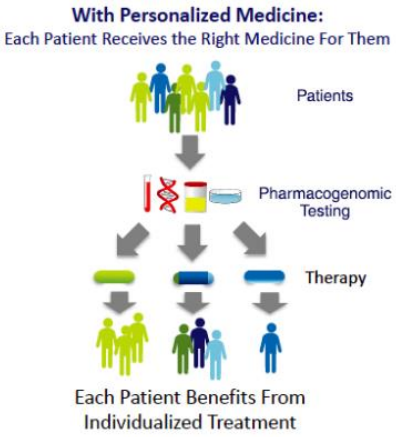
… just one (important) example.

What do we get in return?

Tangible Benefits: Advances in Data Analytics

- Healthcare
  - Precision medicine
  - Monitoring devices
- Other contexts





What's the German policy perspective?

Datensparsamkeit mag für einzelne Bereiche richtig sein, aber die Wertschöpfung der Zukunft, die besteht nicht mehr darin, dass man besonders wenig Daten hat, sondern das man aus besonders vielen Daten möglichst auch interessante Schlussfolgerungen und Anwendungen schöpft.

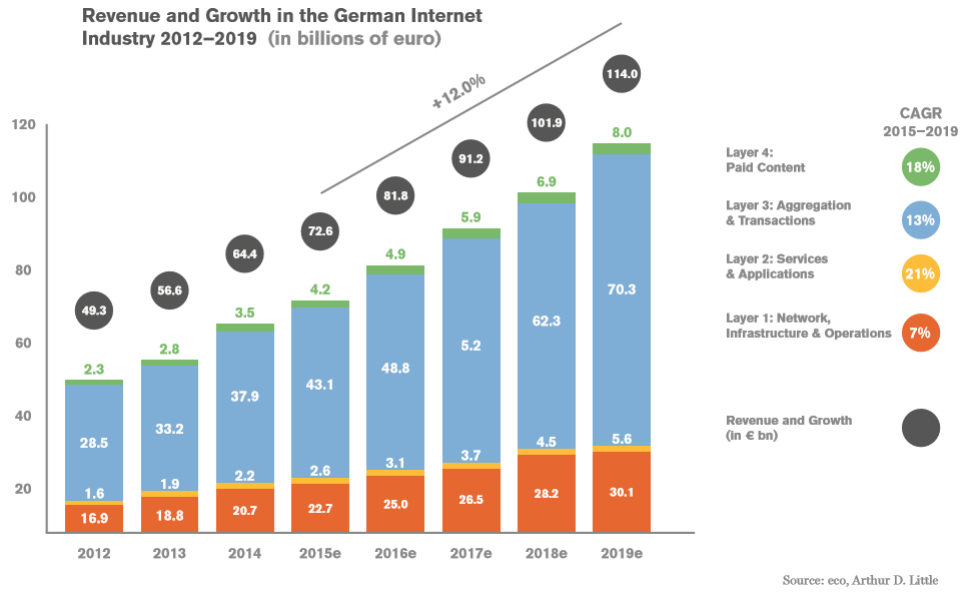
Und da müssen wir an vielen Stellen in Deutschland sicherlich noch ein Stück weit umdenken.

dbb Jahrestagung 2017: Rede von Angela Merkel

The Press – Slightly more dramatic.

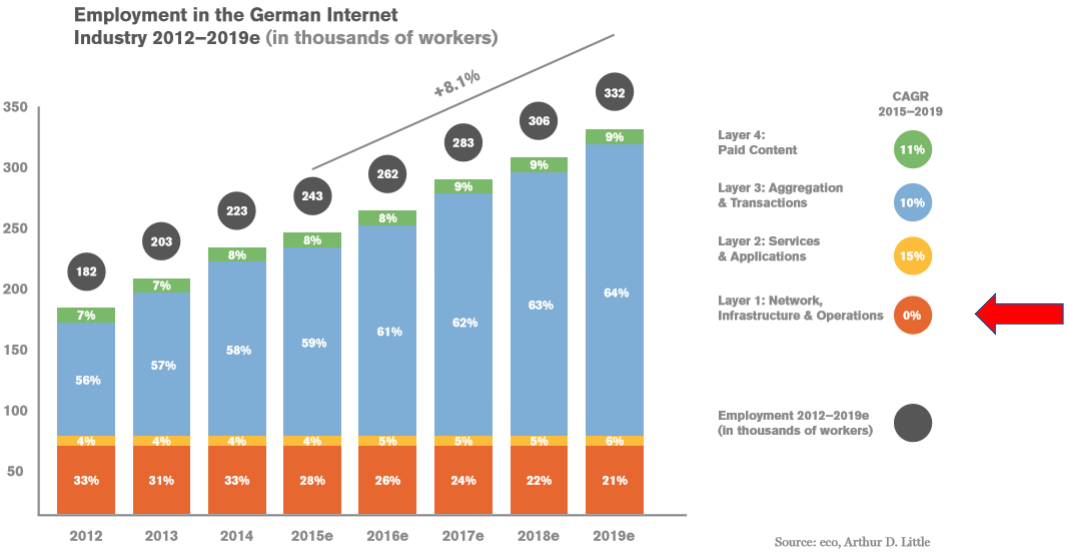
9. Januar 2017, 21:04 Uhr Digitalisierung

Merkel: Deutschland droht, digitales Entwicklungsland zu werden



Source: eco, Arthur D. Little

Overall GDP growth Germany: 1.7%



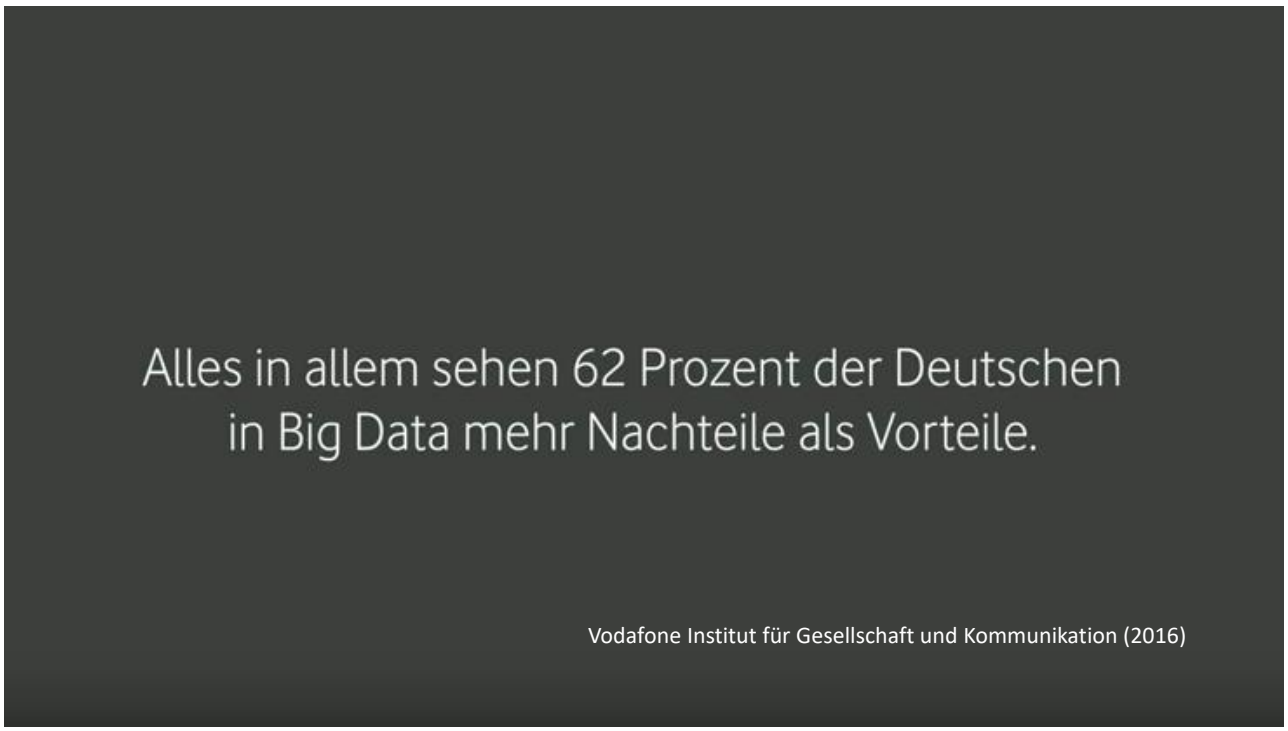
Source: eco, Arthur D. Little

An opposing view on BIG DATA

„PRIVACY MADE IN GERMANY" KÖNNTE EIN VERKAUFSARGUMENT SEIN

DIVSI
Deutsches Institut für Vertrauen und Sicherheit im Internet

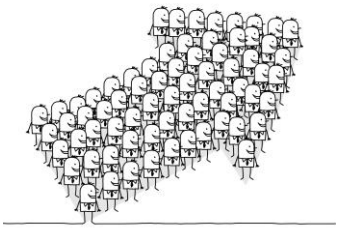
What's the German citizen perspective?



How are we moving forward?

Individual activities such as cookie management?

- Self-identify yourself through privacy-related activities?



Collective action?

- Initiated on sites of private companies, government sites?

Discussion