PRESERVING THE UTILITY OF DATA AND PRIVACY OF INDIVIDUALS

Dr. Claus D. Ulmer, SVP, Global Data Privacy Officer Deutsche Telekom AG
Brussels November 8th 2016
THE DIGITAL ERA IS CHANGING INDUSTRY’S PARADIGMS

- internet of things
- convergence
- mix and match
- individualization
- apps
- synchrony
- simplicity

virtualization
- bandwidth
- All-IP
- coverage
- softwarization
- hybrid networks
- stability
- LTE

open platforms
- interoperability
- Industry 4.0
- data is the resource
- two-sided business model

OTT
- network effects
- connected data platforms
- ecosystem
- freemium

data analytics
- modularization
- data analytics

LIFE IS FOR SHARING.
DATA EXCHANGE, PROCESSING AND ANALYTICS CONTINUE TO INCREASE

Extensive collection and processing of personal data

Increasing complexity through global data flows

Comprehensive connection of devices and everyday objects

“... in the 60 seconds you've been on this (internet) page, approximately 1354440 GB of data was transferred over the internet ...”

Source: CISCO, VNI Complete Forecast Highlights Tool, 2016
### Public Skepticism and Lack of Trust Endanger Digital Business Models

**CERES study "Digital Self-Determination"**

- 91% of Germans believe that users' personal data is accessed on the Internet unnoticed.
- 82% believe that most companies share their customer data with other companies.
- 85% believe there is no way to find out which private companies or government agencies save their customers' personal data.

**Dimap study "EU and Digitization"**

- 80% of Germans aged 18-24 want politicians "to pay special attention to strengthening privacy protection."

**NTIA survey – U.S.**

- 45% of 41,000 surveyed American households stated that they limit their Internet use due to privacy concerns.

**Example excerpts from CERES study**

<table>
<thead>
<tr>
<th>Agreement Level</th>
<th>Agree</th>
<th>Rather Agree</th>
<th>Rather Disagree</th>
<th>Disagree</th>
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</thead>
<tbody>
<tr>
<td><strong>While using free software user's personal data will be transferred to third parties.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>57</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Most companies transfer the data of their customers to third parties.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>50</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>One is unable to figure out, which private companies or government agencies store their customer's personal data.</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>40</td>
<td>45</td>
<td>11</td>
<td></td>
<td></td>
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</tbody>
</table>

* Source: Study "Digital Self-Determination"; CERES (Center for Ethics, Rights, Economics and Social Sciences of Health) on behalf of Deutsche Telekom 2016

** Source: Study "European Union and Digitization"; Dimap on behalf of the German government's Federal Press Office, April 2016

*** Source: Study National Telecommunications and Information Administration (NTIA), May 2016
91% of those surveyed want to know which data is available about them online.

88% want to have personalized influence over how their data is used and processed on the Internet.

95% want to be notified about the further use of their data.

* Source: Study "Digital Self-Determination"; CERES on behalf of Deutsche Telekom 2016
"Deutsche Telekom assumes responsibility for consistently fostering people's trust in how their data is used. This is the only way that digital business/processing models can be successfully further developed for the good of society and the individual.

The individual's digital sovereignty takes center stage. This autonomy is guaranteed through a high degree of transparency, decision-making freedom and the development of privacy-friendly solutions. To this end, privacy experts need to be involved from the start in the development of new products and services that process personal data."

(Excerpt from DT green paper "Privacy in the digital world")

Means: consent based data processing ...
DEUTSCHE TELEKOM HAS A GOOD PUBLIC PERCEPTION WHEN IT COMES TO TRUST AND DATA PRIVACY

MOST TRUSTED INTERNET AND MOBILE BRAND

Source: Institut für Demoskopie Allensbach, 2016

*Share of people who consider these companies to be reliable
ANONYMIZATION AND PSEUDONYMIZATION SOLUTIONS BY DEUTSCHE TELEKOM

IF CONSENT IS NOT SUFFICIENT OR CONCRETE PERSONAL INFORMATION IS NOT IN FOCUS, WE NEED STABLE PSEUDONYMIZATION AND ANONYMIZATION SOLUTIONS.

SUCH AS ...

Motionlogic

Deep insights. Smart decisions.

ENKRODER

Entertain TV

LIFE IS FOR SHARING.
MOTIONLOGIC
ANONYMIZATION OF TRAFFIC DATA

HSM: Hardware Security Module
RNG: Random Number Generator
IMSI: International Mobile Subscriber Identity
TMSI: Temporary Mobile Subscriber Identity
IMEI: International Mobile Equipment Identity
Age: Age Category in 10 year steps
Gen.: Gender
ZIP: ZIP code (Postleitzahl)
ENKRODER
ANONYMIZATION / PSEUODNYMIZATION OF DATA

- Scaleable pseudonymization and anonymization solution
- It ensures that ...
- that you still can make analysis of the data
**ENKRODER**  
**ANONYMIZATION / PSEUODNYMIZATION OF DATA**

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### Screen Shot

![Screen Shot Image](image-url)

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### Table

<table>
<thead>
<tr>
<th>Forename</th>
<th>Surname</th>
<th>Street</th>
<th>Street Nr.</th>
<th>ZIP Code</th>
<th>Town</th>
<th>Phone Nr.</th>
<th>IP Addr.</th>
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<td>Abram</td>
<td>Ringel</td>
<td>Friedenweg</td>
<td>6</td>
<td>06792</td>
<td>Sanderau</td>
<td>+49 6638 557695</td>
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<tr>
<td>Justin</td>
<td>Moltzing</td>
<td>Currie Road</td>
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<td>Kathleen</td>
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<td>Wamber-von-Braun-Alley</td>
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### Table Continued

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<td>Freyenberg</td>
<td>Brünnerstr.</td>
<td>958</td>
<td>05588</td>
<td>Rabczyk мощ.</td>
<td>+49 5305 557507</td>
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<tr>
<td>Olinda</td>
<td>Spiegelmann</td>
<td>Hamburger Str.</td>
<td>374</td>
<td>31520</td>
<td>Ueli</td>
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<td>79720</td>
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<td>Rossy</td>
<td>Nowakowski</td>
<td>Herrenstr.</td>
<td>216</td>
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<td>Alqatá</td>
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</tr>
</tbody>
</table>

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**LIFE IS FOR SHARING.**
**ENTERTAIN TV**

**PSEUDONYMIZATION OF USAGE TELEVISION**

- EntertainTV is an IP-TV solution
- remote control generated actions will be pseudonymized by AES 128 encryption for reports of households or several Set-Top-Boxes in one household
- On the basis of obligations to public broadcasters Telekom submits statistics on the usage of television
OUTLOOK – WHAT TO COME

- the General Data Protection Regulation (GDPR) gives us the floor for harmonization, and therewith standardization

- several projects are initiated already

- let us try to further develop these cooperations ...
THANK YOU FOR YOUR KIND ATTENTION!

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TELEKOM.COM/PRIVACY
A BASIC PROBLEM

When encrypting an entire set of data ...
A BASIC PROBLEM

... its information will be completely obfuscated.
A BASIC PROBLEM

a complete data set consists out of single dates ...

Pseudonymisation is done date by date. Therefore ...
A BASIC PROBLEM

... some statistical *informationen* will be preserved.