To share or not to share?
On responsibility in social software

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DATA SHARING

People

Tech

Data

Information systems, devices, ...

data in a variety of systems

extract, load, transform, clean, anonymize, de-identify, ...

data used for analytics

automated decisions, recommendations, predictions, ...

interpretation by analysts, scientists, doctors, managers, ...

report, discover, mine, learn, check, visualize, ...

Results

DATA ANALYTICS
Location sharing in family life (1)

Responsibility and Privacy — Ethical Aspects of Using GPS to Track Children

Jessica Nihlén Fahlquist
Philosophy Section, Delft University of Technology, Delft, The Netherlands

24/7 monitoring
Location sharing in family life (2)

Responsibility and Privacy: Aspects of Using GPS

Jessica Nihlén Fahlquist
Philosophy Section, Delft University of Technology

P.-P. Verbeek, 2014: The question is not whether we say “yes” or “no” to technology, but how we shape and use it.

24/7 monitoring
Responsibility in social software: understanding social context

Contextual integrity:

- information ought to be distributed and protected according to norms governing distinct social contexts

- “the ideal is flexibility in how [systems] are adapted to particular [social] contexts so the flow of information may be tailored according to [...] norms”
Commitments about location sharing (1)
Kayal, Brinkman, Neerincx, Van Riemsdijk

Basic check-in functionality
Commitments about location sharing (2)
Kayal, Brinkman, Neerincx, Van Riemsdijk
Improved support for user values with social commitments (SC) (n=34)

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<tr>
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<th>WithoutSC</th>
<th>WithSC</th>
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<td><strong>Independence</strong></td>
<td>6.2(1.4)</td>
<td>6.6(1.5)*</td>
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<td>FamSec 1</td>
<td>6.0(2.6)</td>
<td>6.5(2.9)</td>
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<td>FamSec 2</td>
<td>8.0(2.0)</td>
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*Note: * $p < .05$, ** $p < .01$
Value-based automatic conflict resolution (n=396)

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| %Prediction    | 68.4   | 77.6   | 72.3    | 74.4    | 75.1    | 77.8    | 77.0    | 77.9    |

order  norm type  values  combination
Formal analysis of norm compliance
Van Riemsdijk, Dennis, Fisher, Hindriks (AAMAS’13,’15)

**Definition 3. (Norm-Constrained Decision Rule)**

\[
\frac{(n \rightarrow n') \in \text{Dec} \quad n \rightarrow n' \models N}{n \rightarrow n'}
\]

**Definition 4. (Action Insertion Rule)** Let \( n = \langle s, \text{aux}, a \rangle \), \( T(a', s) = s' \), and \( n' \) be of the form \( \langle s', \text{aux}', a' \rangle \).

\[
\frac{n \rightarrow n' \models N \quad \forall n''. ((n \rightarrow n'') \in \text{Dec} \Rightarrow n \rightarrow n'' \not\models N)}{n \rightarrow n'}
\]

**Definition 11. (Normative State in Conflict)** Let \( N \) be a set of norms, \( T \) be a transition function, and \( n = \langle s, \text{aux}, a \rangle \) a normative state, and let \( \text{pnf} = \langle s', \text{aux}', A \rangle \) be a PNF of \( n \) wrt. \( N \).

- We say that \( \text{pnf} \) is in practical conflict with \( T \) iff there is an action \( a \) such that \( \text{done}(a) \in A \) and there is no \( \text{done}(a) \in A : T(a, s) = s' \).
- We say that \( \text{pnf} \) is in normative conflict iff \( \exists a, b : a \neq b \) and \( \text{done}(a), \text{done}(b) \in A \) (obligation conflict), or \( \exists a : \text{done}(a), \neg\text{done}(a) \in A \) (prohibition conflict).
Human experience

- What does it mean to feel safe with the technology?
- How does the software affect relations between people?

Context awareness

- How to obtain norms from the social context at run-time? Cf. process mining
- Besides values, which other (social) contextual information can be used to resolve normative conflicts?

Normative reasoning

- What if the software cannot comply with a norm, e.g., due to external circumstances?
- How to anticipate potential non-compliance and prevent it?
- How to determine at run-time to what extent norm-compliance can be guaranteed?
- How does scale come into play?
Application Areas

- social sensing
- supporting elderly
Responsibility in social software

- **Respect**: understand the social context and share data with respect for social norms (confidentiality)
- **Reliability**: provide guarantees concerning compliance with social norms (accuracy, transparency)
- **Resilience**: handle non-compliance in a flexible way with an understanding of the social context (fairness)