A Case Study on the Role of Usability Studies in Developing Public Policy

Rebecca Balebako, Richard Shay, Lorrie Faith Cranor
WANTED: USABILITY EXPERTS

• Usability experts are needed to help create and evaluate public policy
  • Voting machines
  • Accessibility
  • Privacy and Security

• I offer some lessons learned
CONSUMER DATA PRIVACY IN A NETWORKED WORLD:
A FRAMEWORK FOR PROTECTING PRIVACY AND PROMOTING INNOVATION IN THE GLOBAL DIGITAL ECONOMY

FEBRUARY 2012
This web page provides details on the NTIA-convened privacy multistakeholder process regarding mobile application transparency. On June 15, 2012, NTIA announced that the goal of the first multistakeholder process is to develop a code of conduct to provide transparency in how companies providing applications and interactive services for mobile devices handle personal data.
MULTI-STAKEHOLDER PROCESS (MSHP)

• Open meetings
• Monthly
• Stakeholders
  • App development companies
  • Consumer-advocate non-profits
  • Privacy lawyers
NTIA CODE OF CONDUCT

• Goal: Short-form privacy notice for apps
  • Inform app users about data collection
  • Improve transparency
  • Standardized notice
NTIA CODE OF CONDUCT

• Short form notice must inform users about
  • 7 Data Types
  • 8 Third-Party Entities
DATA TYPES

• **Biometrics** (information about your body, including fingerprints, facial recognition, signatures and/or voice print.)

• **Browser History and Phone or Text Log** (A list of websites visited, or the calls or texts made or received.)

• **Contacts** (including list of contacts, social networking connections or their phone numbers, postal, email and text addresses.)

• **Financial Information** (Includes credit, bank and consumer-specific financial information such as transaction data.)

• **Health, Medical or Therapy Information** (including health claims and information used to measure health or wellness.)

• **Location** (precise past or current location and history of where a user has gone.)

• **User Files** (files stored on the device that contain your content, such as calendar, photos, text, or video.)
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THIRD-PARTY ENTITIES

- **Ad Networks** (Companies that display ads to you through apps.)
- **Carriers** (Companies that provide mobile connections.)
- **Consumer Data Resellers** (Companies that sell consumer information to other companies for multiple purposes including offering products and services that may interest you.)
- **Data Analytics Providers** (Companies that collect and analyze your data.)
- **Government Entities** (Any sharing with the government except where required or expressly permitted by law.)
- **Operating Systems and Platforms** (Software companies that power your device, app stores, and companies that provide common tools and information for apps about app consumers.)
- **Other Apps** (Other apps of companies that the consumer may not have a relationship with)
- **Social Networks** (Companies that connect individuals around common interests and facilitate sharing.)
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USABILITY TEST SUBGROUP

• There was no consensus in the usability group with regard to the following:
• Is any of the actual language of the Code subject to testing for consumer comprehension?
EXPERIMENT TO EVALUATE THE UNDERSTANDING OF THE CODE OF CONDUCT TERMS

Rebecca Balebako, Rich Shay, Lorrie Faith Cranor
ONLINE SURVEY

• 10 randomized app scenarios
• Users selected the data and entities shared in each scenario
• 2 conditions – with and without parentheticals
The SuperTax app lets you fill out and submit your tax forms quickly and easily.

SuperTax will take a picture of your W-2. It will answer questions about your financial information, including salary and interest income.

It will then submit your return to state and federal agencies.

The scenarios describe the data collection and sharing completely, so you do not need to guess anything outside of what is described.

16. For each data collected by the app, what type of data is it?

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<th>Browser History and Phone or Text Log</th>
<th>Contacts</th>
<th>Financial Information</th>
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<th>Location</th>
<th>User Files</th>
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The different types of entities with which data can be shared are defined as follows:

- Ad Networks (Companies that display ads to you through apps.)
- Carriers (Companies that provide mobile connections.)
- Consumer Data Resellers (Companies that buy and/or sell consumer information to other companies for multiple purposes including offering products and services that may interest you.)
- Data Analytics Providers (Companies that collect and analyze your data.)
- Government Entities (Any sharing with the government except where required or expressly permitted by law.)
- Operating Systems and Platforms (Software companies that power your device, app stores, and companies that provide common tools and information for apps about app consumers.)
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- Social Networks (Companies that connect individuals around common interests and facilitate sharing.)

27. Apps can share data with different categories of entities. For each of the entities with which this app shares data, what category would best describe the entity?

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<thead>
<tr>
<th></th>
<th>Ad Networks</th>
<th>Carriers</th>
<th>Consumer Data Resellers</th>
<th>Data Analytics Providers</th>
<th>Government Entities</th>
<th>Operating Systems and Platforms</th>
<th>Other Apps</th>
<th>Social Networks</th>
<th>None of the Above</th>
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SURVEY PARTICIPANTS

• 791 participants from Amazon mturk
  • 51% female
  • Age 18-73 years (mean 33, std 11)
  • 82% own a smartphone
• Total cost: $913.35
WHAT IS THE RIGHT ANSWER?

• Ask the Experts – NTIA MSHP participants
• 4 participated
• Low agreement amongst experts
  • All 4 agreed on 8/19 entities
  • All 4 agreed on 16/34 data types
PARTICIPANT RESULTS

- Used ‘common understanding’
  - Winning term
  - High common understanding:
    - >60% of participants agreed on the winning term
  - Low common understanding
    - <60% of participants agreed
COMMON UNDERSTANDING
THIRD PARTIES

SuperTax: State Agency
COMMON UNDERSTANDING
THIRD PARTIES

- Ad Networks
- Data Analytics Providers
- Other Apps
- Not Sure
- Carriers
- Government Entities
- Social Networks
- Consumer Data Resellers
- Operating Systems and Platforms
- None
User Files (files stored on the device that contain your content, such as calendar, photos, text, or video.)
USER STUDY RESULTS

• Parenthetical text helped sometimes
• Third-Party entities are poorly understood.

• Better definitions are needed
IMPACT

• Technical report released July 17, 2013
• Final NTIA MSHP meeting July 25th, 2013
PUBLIC POLICY FOR USABILITY EXPERTS

• Disagreement about what ‘usability’ is.
• Cost of usability studies impacts what gets studied and when.
• Process fatigue; the timeline to solve a problem is different than in academia.
• Engage early.
QUESTIONS?

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LIMITATIONS

• No ground truth
• Did not test better or alternative wording
• Not part of the typical flow for users
• Short form was not actually tested
• Final Code of Conduct was announced one week after tech report was released
## PROTOTYPE

### History Quiz

<table>
<thead>
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<th>PRIVACY DASHBOARD</th>
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<tbody>
<tr>
<td><strong>Browser History</strong></td>
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<td><strong>Phone &amp; Text Logs</strong></td>
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<td><strong>Biometrics</strong></td>
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<td><strong>Financial</strong></td>
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<td><strong>Contacts</strong></td>
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<td><strong>Videos</strong></td>
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<td><strong>Location</strong></td>
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<td><strong>Health</strong></td>
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### This App Shares Data With:

- Ad Networks
- Carriers
- Consumer Data Regulators
- Data Analytics Providers
- Government Entities
- Operating Systems and Platforms
- Other Apps
- Social Networks
CURRENT INTERFACES

“CLP” Would Like to Use Your Current Location

Don’t Allow  OK
COMMON UNDERSTANDING

THIRD PARTIES

![Common Understanding of Third Parties Chart]

- Ad Networks
- Data Analytics Providers
- Carriers
- Government Entities
- Other Apps
- Carrier Etiquette
- Social Networks
- None
- Operating Systems and Platforms
- Consumer Data Resellers
## COMMON UNDERSTANDING DATA TYPES

<table>
<thead>
<tr>
<th>Category</th>
<th>Biometrics</th>
<th>User Files</th>
<th>Financial Information</th>
<th>Browser History and Phone or Text Log</th>
<th>Contacts</th>
<th>Health, Medical or Therapy Information</th>
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COMMON UNDERSTANDING
DATA TYPES
COMMON UNDERSTANDING
DATA TYPES

SuperTax: Photo of W2

User Files (files stored on the device that contain your content, such as calendar, photos, text, or video.)
PROTOTYPE FROM ACT

History Quiz

PRIVATE DASHBOARD

- Browser History: Yes
- Phone & Text Logs: No
- Biometrics: No
- Financial: Yes
- Contacts: Yes
- Writing Files: No
- Location: Yes
- Health: No

This app shares data with:

- Ad Networks
- Carriers
- Consumer Data Resellers
- Data Analytics Providers
- Government Entities
- Operating Systems and Platforms
- Other Apps
- Social Networks