

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

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# 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

# RECENT POLICY: WHITE HOUSE



CONSUMER DATA PRIVACY  
IN A NETWORKED WORLD:  
A FRAMEWORK FOR PROTECTING  
PRIVACY AND PROMOTING INNOVATION  
IN THE GLOBAL DIGITAL ECONOMY

FEBRUARY 2012



# NTIA: MOBILE APPLICATION TRANSPARENCY



**National Telecommunications  
& Information Administration**  
United States Department of Commerce

## TOPICS

- ❏ [Spectrum Management](#)
- ❏ [Broadband](#)
- ❏ [Internet Policy](#)
- ❏ [Domain Name System](#)
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## Privacy Multistakeholder Process: Mobile Application Transparency

### Topics/Subtopics:

[Internet Policy Task Force](#) [Privacy](#) [Internet Policy](#)

### Date:

February 21, 2013

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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 collected by analyzing fingerprints, facial features, voice, or other unique characteristics
- **Browser History and Phone or Text Log** – lists of websites visited or text messages sent or received
- **Contacts** – information about individuals (including contact information)
- **Financial Information** – credit, debit, bank and consumer-specific financial information
- **Health, Medical or Therapy Information** – including health claims and medical history
- **Location** – base location, current location and history of where a user has been
- **User Files** – files stored on the device that contain your content, such as photos, videos, and other content



# DATA TYPES

- **Biometrics** (information about your body, including fingerprints, facial recognition, signatures and/or voice print.)
- **Browser History and Phone or Text Log**
- **Contacts**
- **Financial Information**
- **Health, Medical or Therapy Information**
- **Location**
- **User Files**

# 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.)

# THIRD-PARTY ENTITIES

- **Ad Networks** – These are intermediaries that connect advertisers with publishers.
- **Carriers** – These are the companies that provide mobile connectivity.
- **Consumer Data Resellers** – These are companies that collect and sell consumer data to other companies for marketing purposes including offering products and services that are targeted to consumers.
- **Data Analytics Providers** – These are companies that collect and analyze consumer data to help companies understand their customers better.
- **Government Entities** – These are government agencies that collect and use consumer data for law enforcement and other purposes.
- **Operating Systems and Platforms** – These are companies that develop and maintain the operating systems and platforms that run on mobile devices (e.g., Apple, Google, Microsoft).
- **Other Apps** – These are third-party applications that the consumer may have installed on their mobile device.
- **Social Networks** – These are companies that connect individuals around common interests and activities.

# 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.)

# FRAGILE AGREEMENT



# 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 parentheses



# SCENARIO EXAMPLE

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?**

	Biometrics	Browser History and Phone or Text Log	Contacts	Financial Information	Health, Medical or Therapy Information	Location	User Files	None of the Above	Not Sure
Photo of W-2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest Income	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# PARENTHETICAL CONDITION

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.)
- 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.)

**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?**

	Ad Networks	Carriers	Consumer Data Resellers	Data Analytics Providers	Government Entities	Operating Systems and Platforms	Other Apps	Social Networks	None of the Above	Not Sure
State Agency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Federal Agency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# 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?

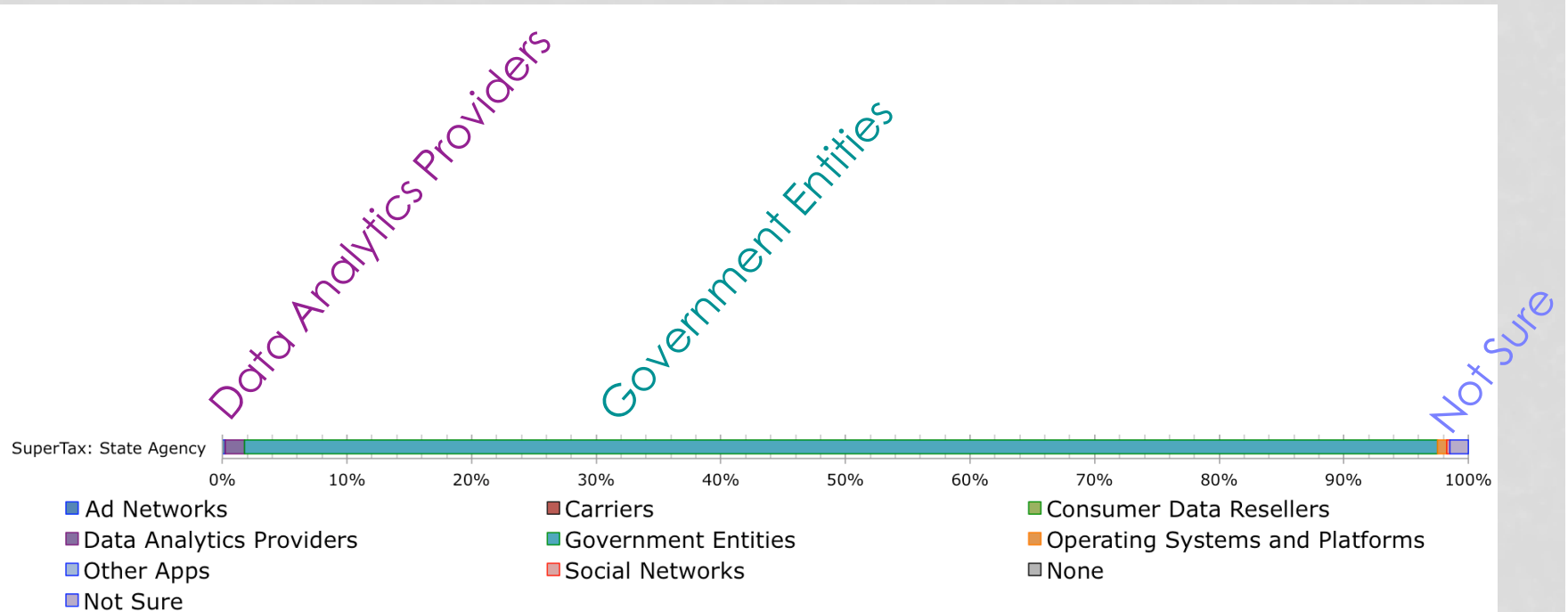
- Ask the Experts – NTIA MSHP participants
- 4 participated
- Low agreement amongst experts
  - All 4 agreed on 8/19 entities
  - All 4 agreed on 16/34 data types

# PARTICIPANT RESULTS

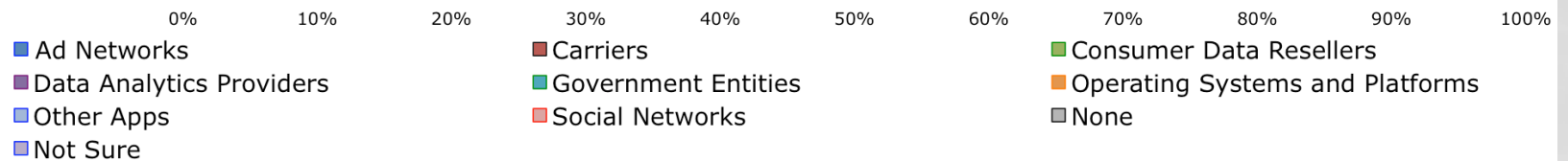
- Used 'common understanding'
  - Winning term
  - High common understanding:
    - >60% of participants agreed on the winning term
  - Low common understanding
    - <60% of participants agreed

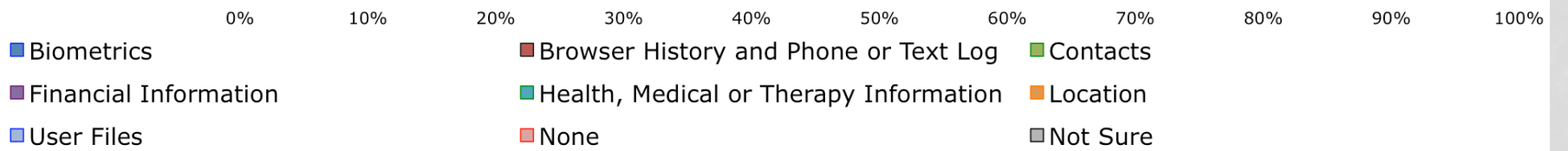
# COMMON UNDERSTANDING THIRD PARTIES

SuperTax: State Agency



# COMMON UNDERSTANDING THIRD PARTIES



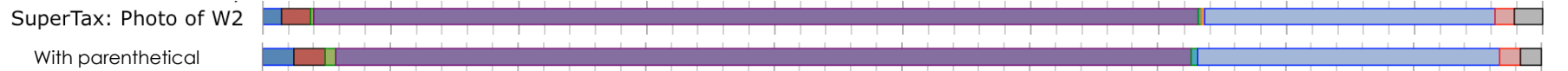




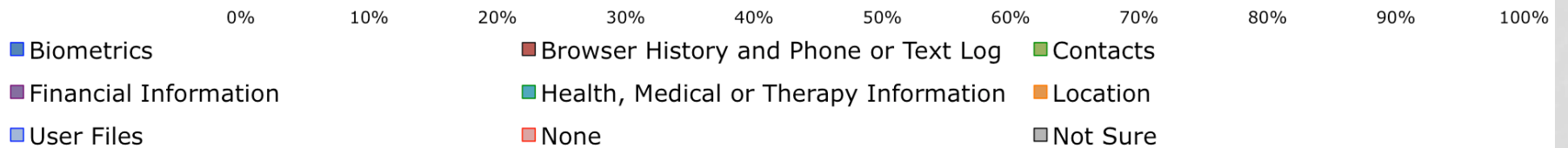
# SuperTax: Photo of W2

Financial Information

User Files



**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 25<sup>th</sup>, 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

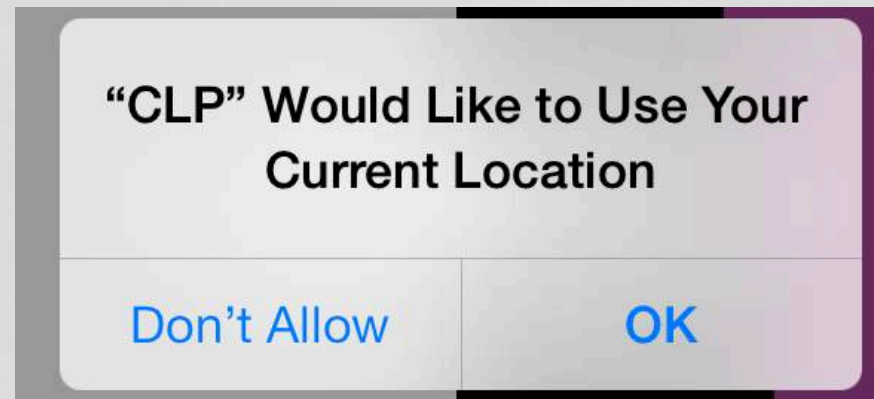
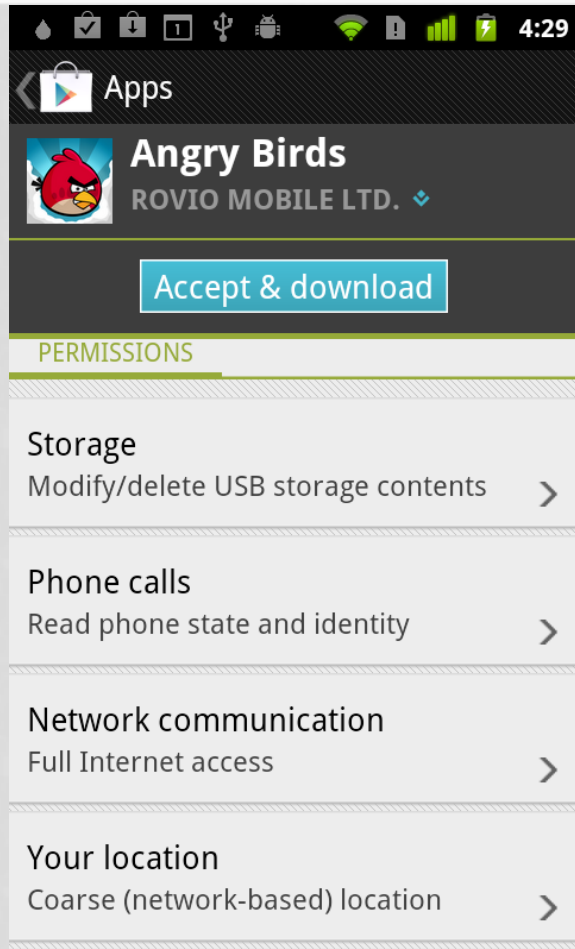
**PRIVACY DASHBOARD**

 BROWSER HISTORY <b>YES</b>	 PHONE & TEXT LOGS NO	 BIOMETRICS NO	 FINANCIAL <b>YES</b>
 CONTACTS <b>YES</b>	 USER FILES NO	 LOCATION <b>YES</b>	 HEALTH NO

**THIS APP SHARES DATA WITH:**

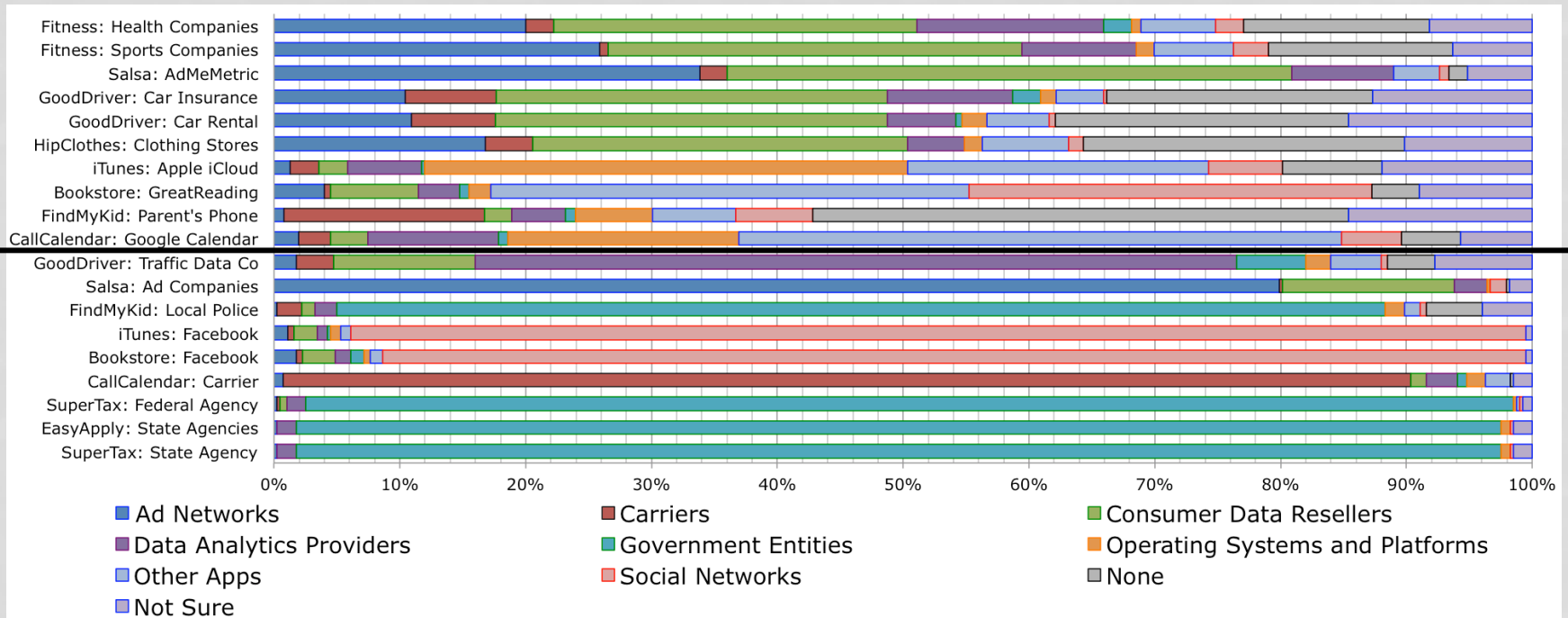
 AD NETWORKS	 CARRIERS	 CONSUMER DATA RESELLERS	 DATA ANALYTICS PROVIDERS
 GOVERNMENT ENTITIES	 OPERATING SYSTEMS AND PLATFORMS	 OTHER APPS	 SOCIAL NETWORKS

# CURRENT INTERFACES

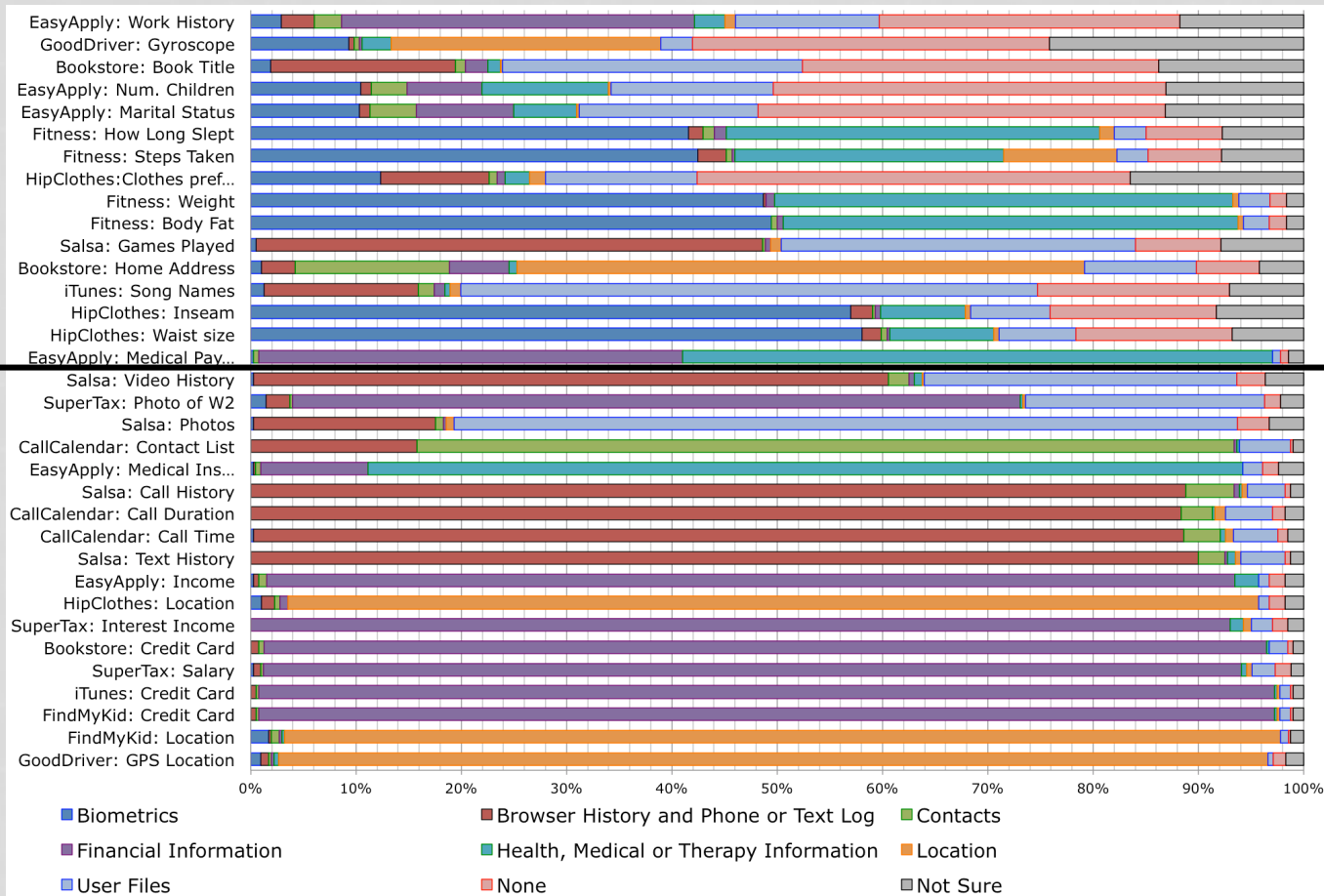




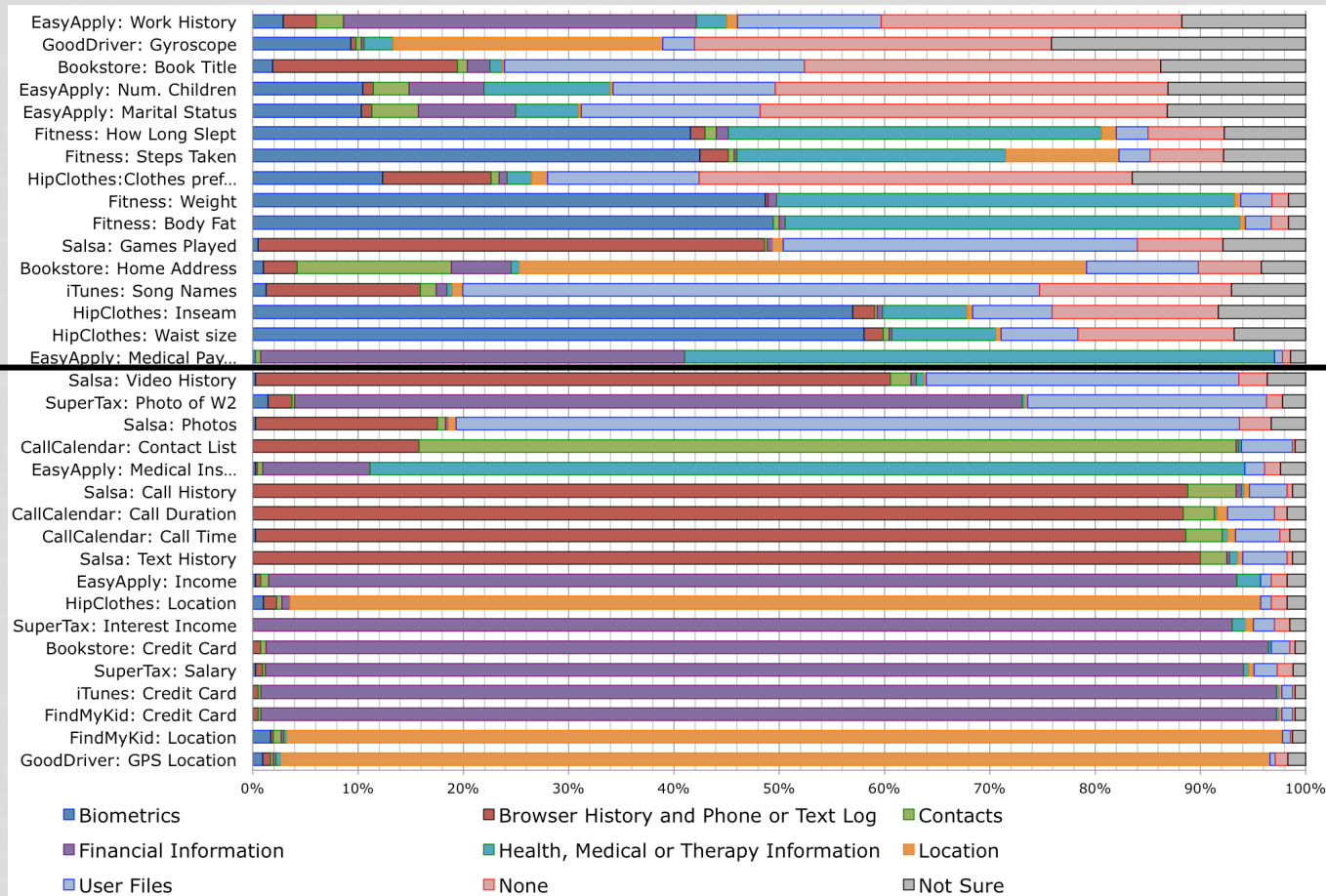
# COMMON UNDERSTANDING THIRD PARTIES



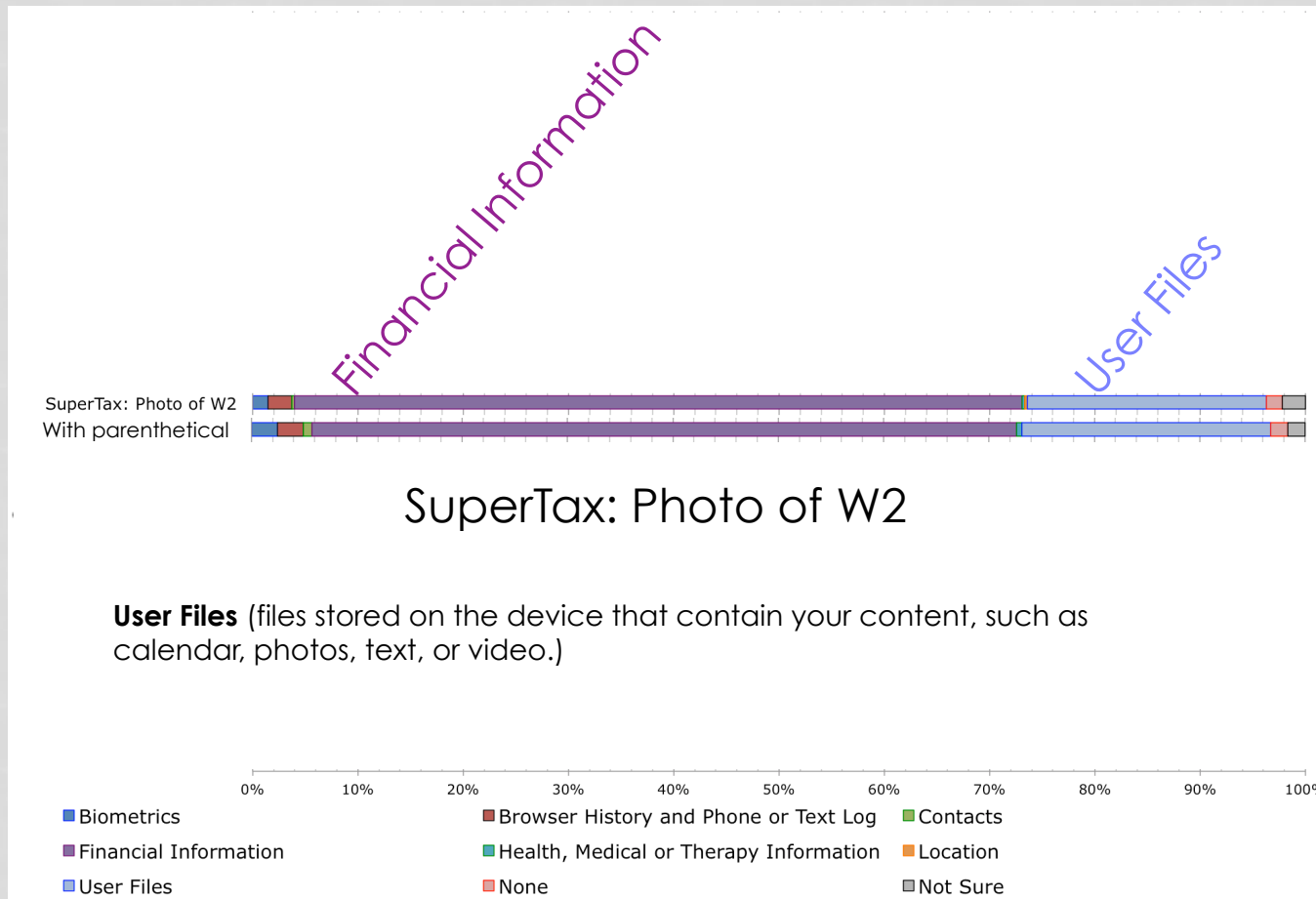
# COMMON UNDERSTANDING DATA TYPES



# COMMON UNDERSTANDING DATA TYPES











# COMMON UNDERSTANDING DATA TYPES











# PROTOTYPE FROM ACT

History Quiz

**PRIVACY DASHBOARD**

 BROWSER HISTORY <b>YES</b>	 PHONE & TEXT LOGS NO	 BIOMETRICS NO	 FINANCIAL <b>YES</b>
 CONTACTS <b>YES</b>	 USER FILES NO	 LOCATION <b>YES</b>	 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