1 Paper

This document contains the survey questions for:

> Bailey Kacsmar, Kyle Tilbury, Miti Mazmudar, Florian Kerschbaum. Caring about Sharing: User Perceptions of Multiparty Data Sharing. USENIX Security 2022.

2 Survey Questions

Note that the ordering of questions two through five were randomized. The first question was always the scenario and the last question before the freeform response was always the privacy mechanism question and correctness check. Additionally, the order of the options within questions were randomized. The below format, such as spacing, is not representative of the original readability of the survey.

1. (Receive one of the twelve scenarios)

   A. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou and GoodHealth will share the customer data they hold with one another. You are a customer of TechForYou and GoodHealth. How acceptable is this scenario?

   B. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth and TechForYou will share the customer data they hold with one another. You are a customer of GoodHealth and TechForYou. How acceptable is this scenario?

   C. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou and GoodHealth will share the customer data they hold with one another. You are a customer of TechForYou. How acceptable is this scenario?

   D. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth and TechForYou will share the customer data they hold with one another. You are a customer of GoodHealth. How acceptable is this scenario?

   E. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou will share its customer data with GoodHealth. You are a customer of TechForYou. How acceptable is this scenario?

   F. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. GoodHealth will share its patients' health records with TechForYou. You are a customer of GoodHealth. How acceptable is this scenario?

   G. TechForYou is a large technology enterprise that wants to acquire additional data about its users. TechForYou wants to buy data about its users from other companies: SmartAd (an online advertising company), MyHomeRetail (a large retail company selling housewares), and MyPurchaseCard (a credit card company). From these other companies, TechForYou will get information on the ads that TechForYou users see, their shopping habits, and their purchasing habits. You are a customer of all these companies. How acceptable is this scenario?

   H. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. GoodHealth wants to buy data about its users from other companies: SmartAd (an online advertising company), MyHomeRetail (a large retail company selling housewares), and MyPurchaseCard (a credit card company). From these other companies, GoodHealth will get information on the ads that GoodHealth users see, their shopping habits, and purchasing habits. You are a customer of all these companies. How acceptable is this scenario?

   I. NiceStartup is a tech startup that that helps its users track their diet, fitness, and social habits. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. TechForYou has bought out NiceStartup and as a result TechForYou now has access to all the data NiceStartup had collected from its users. You are a customer of NiceStartup. How acceptable is this scenario?

J. NiceStartup is a tech startup that that helps its users track their diet, fitness, and social habits. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. GoodHealth bought out NiceStartup and as a result GoodHealth now has access to all the data NiceStartup had collected from its users. You are a customer of NiceStartup. How acceptable is this scenario?

K. AlmostStartup is a tech startup that developed a fitness tracking device. NiceStartup is another tech startup that helps its users track their diet, fitness, and social habits using an app. NiceStartup merged with AlmostStartup. NiceStartup now has access to all the data AlmostStartup had collected from its users. TechForYou is a large internet company that offers a search engine, email accounts and smartphone platforms to users. Now, TechForYou has bought out NiceStartup and as a result TechForYou now has access to all the data both startups, NiceStartup and AlmostStartup, had collected from their users. You were a customer of AlmostStartup. How acceptable is this scenario?

L. AlmostStartup is a tech startup that developed a fitness tracking device. NiceStartup is another tech startup that helps its users track their diet, fitness, and social habits using an app. NiceStartup merged with AlmostStartup. NiceStartup now has access to all the data AlmostStartup had collected from its users. GoodHealth runs a chain of hospitals across the country and stores health data for millions of patients during its day-to-day operations. Now, GoodHealth has bought out NiceStartup and as a result GoodHealth now has access to all the data both startups, NiceStartup and AlmostStartup, had collected from their users. You were a customer of AlmostStartup. How acceptable is this scenario?

2. How acceptable is the above scenario if the company (or companies) use the acquired data...

   (a) for generating advertising revenue?

   (b) in exchange for providing you with a monetary return (e.g. free service, reduced rate, or gift-card)?

   (c) to improve the company's (or companies') services?

3. How acceptable is the above scenario if the company (or companies) deletes the acquired data...

   (a) never?

   (b) after a specified length of time (e.g. three months, one year, etc.)?

   (c) after they have finished using it?

4. How acceptable is the above scenario if the company (or companies) inform you by...

   (a) an email or app notification which indicates that by continuing to use their service you agree to your data being shared?

   (b) providing an option to allow your data to be shared? Your data will not be shared by default unless you select this option.

   (c) providing an option to stop your data from being shared? Your data will be shared by default unless you select this option.

   (d) no formal notification? You learn of the scenario from an independent news report.

5. What is the shape of a red ball?

6. (Receive one of five privacy mechanisms)

   (a) The original company will only share approximations of all customers' true data, using what's known as Local Differential Privacy (LDP). LDP guarantees that the odds of correctly guessing your true data from the shared approximation, are low. How acceptable is the above scenario if the company (or companies) used local differential privacy (LDP)?

   (b) The new company will create approximations of all customers' true data, using what's known as Central Differential Privacy (CDP). The new company can compute statistics over these approximations, without using your true data anymore. CDP guarantees that the odds of correctly guessing your true data from an approximation, are low. How acceptable is the above scenario if the company (or companies) used centralized differential privacy (CDP)?

   (c) Anonymizing the data means that personal identifiers such as your name, age, gender, email and contact address will be removed. Only the anonymized data for all users will be stored together (in a database). How acceptable is the above scenario if the company (or companies) only shared anonymized data?

   (d) The company will combine your data with other customers' data and calculate aggregate statistics, such as averages, over all customers' data. The original data will not be shared. How acceptable is the above scenario if the company (or companies) only shared aggregate statistics?

(e) Encryption means means that your data cannot be read by a person or computer who does not have a secret key to remove the encryption. Encryption allows the company to use your data without learning what it actually is. How acceptable is the above scenario if company (or companies) only shared encrypted data?

7. Which of the following best describes the technique in Question 6?

   (a) Individual data is changed such that the original data is not recoverable without additional information.

   (b) Collected data is received by the new company and they modify the data so that it is hard to identify individual contributions.

   (c) Individual data is changed by the original company so that it is hard to later identify the original individuals data contributions.

   (d) Parts of the data have been removed so that it is hard to connect to individuals.

   (e) All users' data is combined and only the results of the computations over the collective data are shared.

8. In general, what are your thoughts on companies sharing data with other companies?

9. –begin page three– Please specify your gender:

10. Please select your age group:respondents

11. Which of the following best describes the principal industry of your employment?

12. What is the highest level of school you have completed or the highest degree you have received?