USA.gov

Federal Front Door Information Exchange

January 2017

18F

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Introduction

18F's Federal Front Door initiative formed with the goal of finding ways to improve public-government interactions across the board. This complex goal necessitated the formation of smaller, more focused research projects. Among these is the **Federal Front Door information exchange project** — an exploration of how federal agencies might share users' information to the users' benefit.

In October 2016, building on earlier research by the Federal Front Door team, a small team formed to execute a discovery project on the concept of information sharing. More specifically, the team sought to better understand both agencies' and users' attitudes toward information sharing, surface current examples of information sharing, and identify the conditions under which users might be most likely to allow agencies to share their information. The results of this research could serve as a foundation for further action.

Executive summary

The info sharing team, which split into two sub-teams, conducted two concurrent tracks of research. One sub-team interviewed representatives from agencies of interest to determine those agencies' attitudes toward information sharing and uncover potential future agency partnerships. The other sub-team conducted interviews and prototype tests with representative groups of end users to determine how those users feel about information sharing and what factors influence whether they're likely to engage in processes that incorporate it.

Through this research, we found:

Information sharing among agencies does exist, though not necessarily in the form we expected: We initially hypothesized that agencies aren't currently sharing user information with each other, but this turns out not to be the case; we identified at least 20 versions of our assumed canonical case for data sharing between agencies. In many cases, agencies are sharing users' information without notifying users beforehand or getting authorization from users. This type of sharing often focuses on verification and/or compliance; for example, an agency may access user information held by another agency to verify that that user has registered for selective service or has paid outstanding taxes. Such examples of information sharing, because they're focused on verification and compliance, are allowed under the Privacy Act of 1974.

Agencies feel the need to re-validate information acquired from other agencies: In keeping with one of our initial hypotheses, agencies maintain a somewhat distrustful stance toward information collected and maintained by other agencies. Several people we talked to confirmed that it would be extremely unlikely for one agency to accept information from an external source without conducting additional review and validation.

We identified fewer potential federal agency pairings (and groupings) than we predicted we would: At the outset of the project, we expected to find a large number of agency pairings that would benefit from the type of information sharing we expected to explore — that is, sharing authorized by the user, and from one agency to another. (Later, we explored the possibility of sharing information from one agency with multiple agencies, though this model didn't figure into our initial hypotheses.) During our research, we identified 20 such pairings, which was fewer than we expected to find. We suspect that even more instances of information sharing between agencies likely exist, and we hope that further research uncovers these; greater visibility of (and discussion around) information-sharing practices may help agencies with complementary processes or missions start exploring the possibility of information sharing.

Generally speaking, end users are OK with agencies sharing their information: The majority of users we interviewed felt comfortable with the notion of different agencies transmitting their

information to one another — so long as they (the users) benefited from it. However, certain circumstances have the potential to undermine this acceptance. If users think an information-receiving agency might harshly judge their personal information after sharing takes place, they may be less enthusiastic about the concept of sharing. Similarly, within the context of the "add-on services" model (described in more detail in the End user research section), users felt less comfortable with sharing if they felt that it might negatively impact the primary task — in our case, completing the Application for Naturalization.

A user's life stage, the "complicatedness" of their situation, and the stakes of the primary task impact their attitude toward sharing: Users who felt they had less to lose felt more comfortable both with providing agencies with personal information and with agencies sharing that information. This finding may warrant additional research — though we tried to recruit a diverse group of participants, our first group of participants skewed young, and most of the participants had comparatively uncomplicated life circumstances. For this reason, the results of our first round of testing may not accurately represent the preferences and experiences of a larger potential user base. We had slightly more diverse participants for our second round of testing, which involved applying for naturalization rather than applying for student financial aid. There seemed to be a correlation between the magnitude of importance of the primary task and users' readiness to share information.

End users prefer explicit descriptions of the benefits of information sharing. Our second round of testing highlighted that end users prefer explicit descriptions of how information sharing will benefit them; this may assuage anxiety they're feeling about sharing and may convince ambivalent users to opt in to optional sharing. We also found that people are less worried about agencies sharing information with each other than they are about sharing information with the government in the first place. Using plain language to detail the benefits of information sharing, and the impact of that sharing on the current task or process, can help users make more informed decisions.

Our insights into current information-sharing practices are somewhat different from what we initially predicted we'd find, and the topic of information sharing warrants additional research. If GSA is interested in continuing its explorations into information sharing, we recommend the following next steps:

- Establish and publish technology and design guidance around information sharing.
- Use existing programs like 18F's consultants or TTS's acquisitions group to help pairs of agencies jointly build digital services that embody the best practices.
- Build a centralized technical capability for data sharing and offer it as a product to pairs (or groupings) of agencies.

Research approach

The problem we explored through this project is a multi-faceted one; consequently, our research approach comprised two focused lines of inquiry. To develop a better sense of how federal agencies and members of the public conceptualize information sharing, we needed to talk directly to members of both groups.

In early October 2016, our team gathered for a kickoff, during which we discussed the questions we'd explore, whether similar investigations had already been undertaken, the assumptions our team was bringing to the table, the hypotheses we'd test, and the processes our team would follow, among other things.

The following are some of the main takeaways from our kickoff:

1. **Other agencies and projects have explored topics related to information sharing (or facets of information sharing), but our particular line of inquiry hasn't been followed.** Before beginning our project in earnest, we wanted to determine whether other agencies or initiatives have investigated similar problem spaces to avoid conducting duplicative research. We identified a few initiatives that shared some thematic overlap with our own. For instance, the now-deprecated MyUSA project had the goal of offering end users the opportunity to create a standard government profile, which would allow said users to store basic demographic information in a place accessible to/shareable with various agencies. Relatedly, teams at the the U.S. Department of Health and Human Services have explored how to allow users to access their personal information being stored by HHS, but they haven't looked into how users could then share that data with other agencies. Likewise, some agencies have investigated how to share information with each other, but may not have considered the end user as an active participant in this sharing.

2. **As a team, we entered the project with a good number of assumptions**. These included:
    a. We might be able to leverage a single-sign-on project already in progress.
    b. End users are more likely to enter relatively sensitive data (for example, their Social Security numbers) after they've entered less sensitive data (for example, their mailing addresses).
    c. It's better to onboard users from an action they're already taking (for example, a form they're already filling out) than to broach the subject of information sharing with no context.
    d. We'll need to take extra care to explain to end users and agencies how we'll protect privacy and keep personal information secure.
    e. End users will only be interested in information sharing if said sharing increases the efficiency or ease of use of a process.
    f. End users will need to be able to opt in (or opt out) of sharing.

g. Agencies may hesitate to participate, considering limited resources, until they see how information sharing will help them more easily support their missions or achieve their goals.
h. CIOs will have concerns about privacy controls, security, and data normalization.
i. CIOs will have concerns about ease of implementation and availability of customer support.
j. To avoid building a valuable and new target for hackers, we (18F) prefer not to store end users' personal data ourselves.

3. **We believed that agencies were predisposed to distrusting other agencies' data**. Based on previous Federal Front Door research, we entered the project with the assumption that, speaking generally, agencies don't trust the validity of other agencies' data. Rather than accepting shared data as is, most agencies (we supposed) would find it necessary to examine and re-validate said data, potentially undermining the time savings enabled by information sharing.

4. **We believed we'd need to win end users over to convince them to allow information sharing**. One of our most strongly held assumptions was that end users would have a strong resistance to the concept of information sharing. Further, we assumed that any interaction featuring sharing would need to work hard to "win over" the user, convincing them that the benefits of sharing far outweigh potential risks.

At the conclusion of the kickoff, the team identified two major research tracks. The first, the **agency track**, would focus on existing instances of information sharing between agencies. The second, the **end user track**, would focus on members of the public and what they'd like to see in instances of information sharing. Our main team divided into two smaller teams, each of which focused on one of these tracks. Though the teams pursued distinct (individual) lines of research, they communicated often to keep the entire group abreast of their findings.

Ideal test cases

Having used our kickoff to explore the current problem space, our team came together to generate a list ideal test cases: conditions that define the agencies and interactions that might benefit most from information sharing. These ideal test cases draw on our team's previous work with other agencies and our cumulative knowledge of legal and procedural restrictions.

Our initial list of ideal test cases, which include criteria applicable both to agencies and end users, was as follows:

1. A good test case involves data that is somewhat burdensome to replicate — data that people will not simply have memorized, or have at their fingertips.

2. A good test case involves data that is used directly in some determination that an agency makes — for example, the disbursement of benefits.

3. A good test case involves something that users view as a single task — for example, filling out a single application for a service or benefit.

4. A good test case probably doesn't involve law enforcement data, because many of the Privacy Act exceptions and exemptions fall under this category.

5. A good test case involves data that users wouldn't share with just anyone — for example, a Social Security number, annual income, veteran status, and so on.

6. A good test case involves data that has an accepted canonical source agency in government.

7. Finally, a good test case is one in which users would experience a concrete benefit from sharing their information. In addition, this benefit must be one users couldn't have realized easily had information sharing not been available.

We used this list of ideal test cases to guide our agency research (dictate which agencies we pursued contact with) and our end user research (determine the real-life experiences after which to model our prototypes).

Agency research

Our agency-related research actually began with a review of legislation with implications for information sharing. These included the Privacy Act of 1974 and the Computer Matching and Privacy Protection Act of 1988. (For more on our team's interpretations of both of these policies, check out these notes on the Privacy Act and this one sheet on the Privacy Act; please note that these served as our working documents and **do not** represent the GSA's stance on the Privacy Act.) Speaking in very broad strokes, the Privacy Act governs how federal agencies may collect, store, and distribute individuals' personal information. The purpose of the act is to "[govern] the collection, maintenance, use, and dissemination of information about individuals that is maintained in systems of records by federal agencies." In general, federal agencies can't distribute people's information without their prior written consent, although there are exceptions to this rule.

The Computer Matching and Privacy Protection Act of 1988 amended the Privacy Act to add several new provisions. These provisions add procedural requirements for agencies to follow when engaging in computer-matching activities, provide matching subjects with opportunities to receive notice and refute adverse information before having a benefit denied or terminated, and require that agencies engaged in matching activities establish Data Protection Boards to oversee those activities. Much like the original Privacy Act, this act establishes guidelines with the public's best interest at their core.

Keeping this legislation in mind, we began identifying current instances of information sharing. This process began in a comparatively un-scientific way: That is, the team first identified agency pairs that are currently using Computer Matching Agreements to share end users' data. Having discovered a number of agency pairs with CMAs — and recognizing that CMA-facilitated sharing wasn't the primary focus of our research — we then brainstormed situations in which user-directed sharing between agencies might make sense. For example, we posited that USCIS might benefit from sharing information with the Department of State to help new citizens more easily acquire U.S. passports. We then investigated to find out whether those connections actually exist. Our initial list of agencies and agency pairings to investigate for sharing potential (along with potential use cases, included parenthetically) included the following:

- Department of Education and the Internal Revenue Service (a la the currently-in-use Data Retrieval Tool)
- U.S. Citizenship and Immigration Services and Department of State (helping new citizens obtain U.S. passports)
- Social Security Administration (Social Security Disability Benefits, which might require interaction with the U.S. Military, the IRS, and potentially USCIS)
- U.S. Department of Agriculture and the Internal Revenue Service (the USDA offers certain grants to individuals, and the grant-award process might require IRS input or data)

- U.S. Small Business Administration and the Internal Revenue Service (applying for personal or business grants and loans requires tax information)

Once we'd brainstormed this initial list, our team delved further into each potential use case, gathering information to determine whether an information-sharing partnership already existed between the agencies, and, if not, whether the conditions for one might exist. In cases where information-sharing already exists, our team sought to learn as much as possible about the regulatory and technological specifics of each situation. In each of the cases listed above, our team reached out to the involved agencies to try to gather more information.

Early research allowed us to focus on the most promising actual and potential sharing scenarios, detailed in subsequent sections. To learn more about the questions that guided our conversations with agencies, read the Agency Conversation Protocol in our **Methodology Supplement**.

Department of Education and the Internal Revenue Service (IRS)

One of our most involved lines of inquiry was with the Internal Revenue Service. Having determined, early on, that the Department of Education makes use of IRS data accessed via the FAFSA's IRS Data Retrieval Tool, we determined to find out more about the legal and technical specifics of this tool. Our team actively pursued contact with IRS team members throughout the course of this project. However, scheduling discrepancies and other factors meant that we weren't able to have substantive conversations with members of the IRS team during this engagement.

Department of Education team members confirmed the benefits of information sharing with the IRS, but for security reasons, they weren't able to provide us with much detail about the functionality of the Data Retrieval Tool. They also wanted to respect the IRS's need for privacy and offered to continue the conversation once they knew the IRS was on the same page. (**Note**: We also spoke to people from the Department of Education's FAFSA Customer Experience Team.)

U.S. Citizenship and Immigration Services (USCIS) and the U.S. Department of State

We also investigated whether there were opportunities for data sharing between USCIS, which handles naturalization applications, and the Department of State, which issues passports. (TSA, which is under the umbrella of the Department of Homeland Security, administers programs like TSA PreCheck, which uses similar information as the Application for Naturalization and the U.S. passport application, but PreCheck serves a comparatively small group of people.)

We had several hypotheses about processes where data sharing between these agencies might play a role. What we discovered was that with *intra-agency* data sharing between

bureaus, policies are somewhat more flexible. USCIS does not currently feel the need to expand data sharing and worries that their user base might be especially resistant to it. Our partners at USA Gov are planning to continue conversations with both agencies, but neither provided a strong case for our alpha.

U.S. Department of Agriculture (USDA) and the Food and Nutrition Services (FNS) program

The FNS isn't a distinct agency; rather, it's a program within the U.S. Department of Agriculture that encompasses SNAP (Supplemental Nutrition Assistance Program), TANF (Temporary Assistance for Needy Families), Head Start, and foster programs. During this conversation, we learned that the FNS program is administered by states, counties, and individual school districts. Each locality collects its own data from program users and stores this data according to local regulations and practices. In some cases, local agencies are required to share user information with each other, but there is no individualized transfer of data back to the federal level.

Because our mandate for Alpha was to minimize the complexity of our project by working with two or three federal agencies, we did not further investigate these instances of sharing. Opportunities for information sharing do exist within the direct certification process; however, because they're all local (not federally overseen), they were beyond the scope of our research and may be outside the scope of related future endeavors.

U.S. Small Business Administration (SBA)

Some offices within the SBA have data-sharing agreements; examples mentioned during this call include the Office of Entrepreneurial Development sharing information with the Census Bureau and the Office of Disaster Assistance sharing information with FEMA. The SBA also engages in some external sharing — they've partnered with the Library of Congress to exchange information. However, most of these instances of information sharing don't involve the end user, and consequently weren't directly related to our areas of investigation.

SBA's small business loans are administered by individual financial institutions under its guidance. In certain cases, data from the IRS or other federal agencies may be part of the loan-application process. As of late 2016, however, the SBA does not appear to be taking advantage of the IRS' Data Retrieval Tool (or other similar sharing-related tools) in its application processes. This may be a good avenue for further exploration.

U.S. Forest Service and the Bureau of Land Management (BLM)

Our conversations with representatives from the U.S. Forest Service and the Bureau of Land management (BLM) yielded some interesting possibilities for further investigation (and, perhaps, collaboration). Both agencies have fairly complex permitting processes for people and groups seeking to use public lands, and both agencies collect similar types of information

from applicants. Most end-user applicants aren't aware of jurisdictional specifics of the public lands they'd like to use, and they view the multiple-application process as needlessly complex and redundant. For this reason, the BLM and the Forest Service are looking for a way to streamline their application processes and create a better experience for their users.

The type of information sharing these agencies are investigating diverges from our model, wherein the user shares information with one agency, which then transmits it to another agency. Discussions between the BLM and Forest Service have highlighted the benefits of a model in which the user enters their information once (into a shared system), and the system then distributes it to the appropriate agencies as needed. Although these conversations occurred too close to the end of this engagement for us to directly support the BLM and Forest Service's needs, there may be promising potential for collaboration in the future.

Other information-sharing opportunities

In addition to those we just described, several other scenarios are common and — from a user perspective — burdensome; we also considered these scenarios as potential information-sharing cases. For our full list of potential information-sharing cases, please see the Methodology Supplement.

Interestingly, it turned out that many of these cases involve sharing private, locally held, or other non-federal types of data with the federal government, rather than authorizing sharing of data already held by one federal agency with another. We held informal conversations with 18F colleagues with extensive experience in the federal government and asked them to review our list of potential cases. Our colleagues confirmed that the type of sequential sharing we had planned on supporting, in which all of the required data is already held at the federal level, is relatively rare. This called into question whether a generalized platform supporting that type of information sharing would be worth the investment. This team is not the right one to make that decision, but we hope our findings will be useful as GSA considers that possibility.

End-user research

Our end-user-focused research was also split into two distinct phases. For both, we built prototypes and conducted interviews with representative groups of end users. End users, as we define them here, are members of the public engaging with one or more federal agencies as a means of accessing benefits or services.

This section details our research questions, hypotheses, and general methodologies for our two rounds of testing. For sprint-by-sprint details of our work, please refer to the our GitHub repository's wiki. For a more detailed account of our research, please consult the Methodology Supplement. There, you'll find research questions, methods, and protocol for both research phases.

Round 1 research

We focused our first round of research on validating a subset of our initial hypotheses:

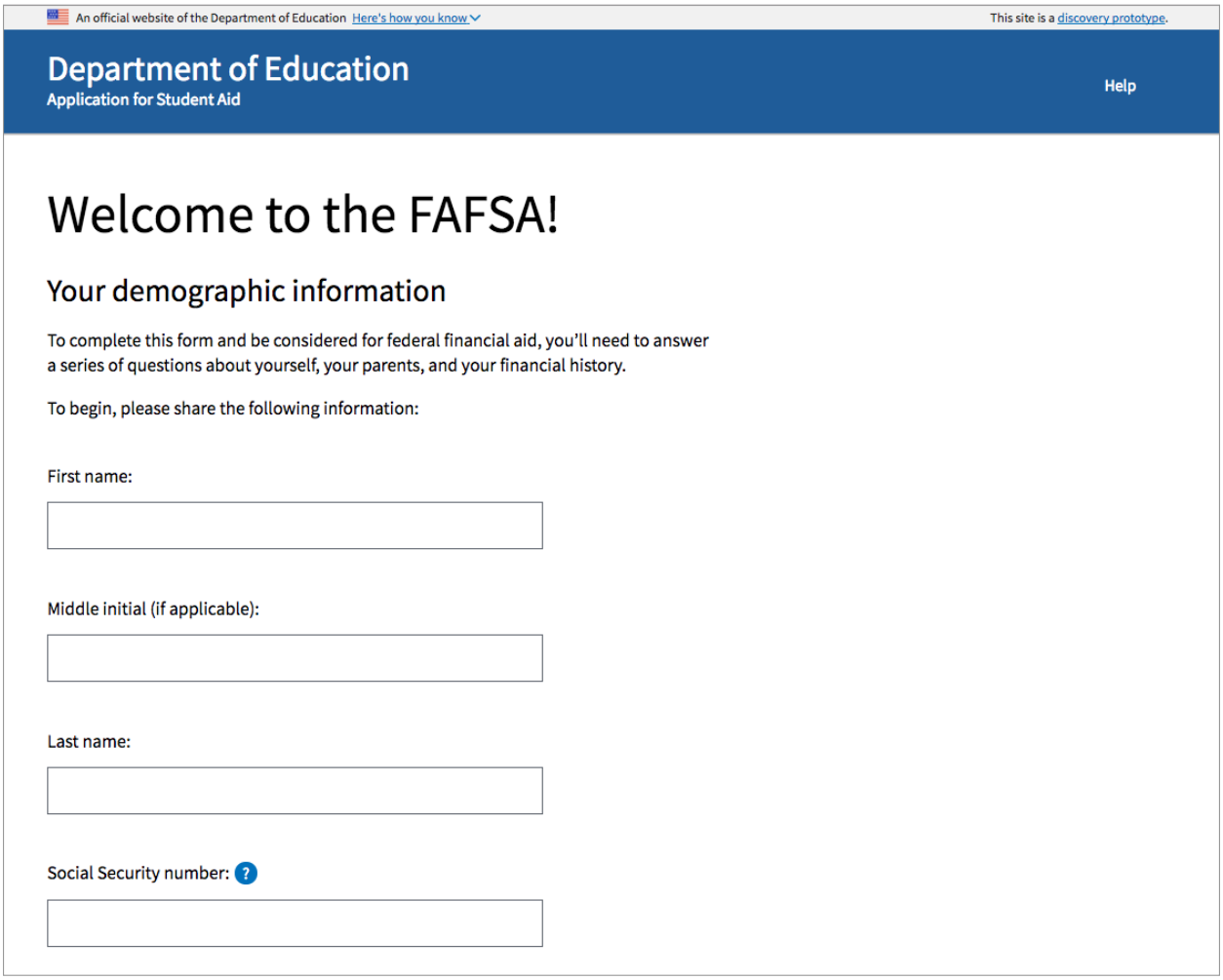
- Most users are skeptical of agencies sharing information with one another; therefore, we'll need to do a good amount of work explaining the benefits of sharing and building trust with our users.
- Despite not being thrilled about agencies sharing information, most users are unlikely to read large blocks of body copy. To accommodate this, we should strive to keep body copy short and communicate main ideas through precisely worded headings.
- Most users are hesitant to share personal information and are concerned about their information being inappropriately shared and stored. For this reason, we should use a more formal, official, and straightforward tone (more serious than 18F's standard conversational tone). This isn't to say that our tone shouldn't be friendly; rather, it should be official, friendly, and reassuring.

To test these hypotheses, we built a prototype that represented a modified version of the FAFSA (Free Application for Federal Student Aid). Why did we choose to model our prototype on the FAFSA? A few factors made this form a logical choice. First, completing the FAFSA is a somewhat burdensome experience: the form itself is relatively long, and many of the questions require information (for example, tax information) that many applicants don't have memorized or readily at hand. Replicating the FAFSA would allow us to meet the first of our ideal test case criteria: that the experience must be at least somewhat burdensome.

What's more, the actual FAFSA is completed by people from considerably different populations (geographic areas, educational levels, income levels, tech-literacy levels, and so on); replicating this form and testing it with representative users would give us access to a diverse group of end users. This factor is important because one of the goals of this project was to determine

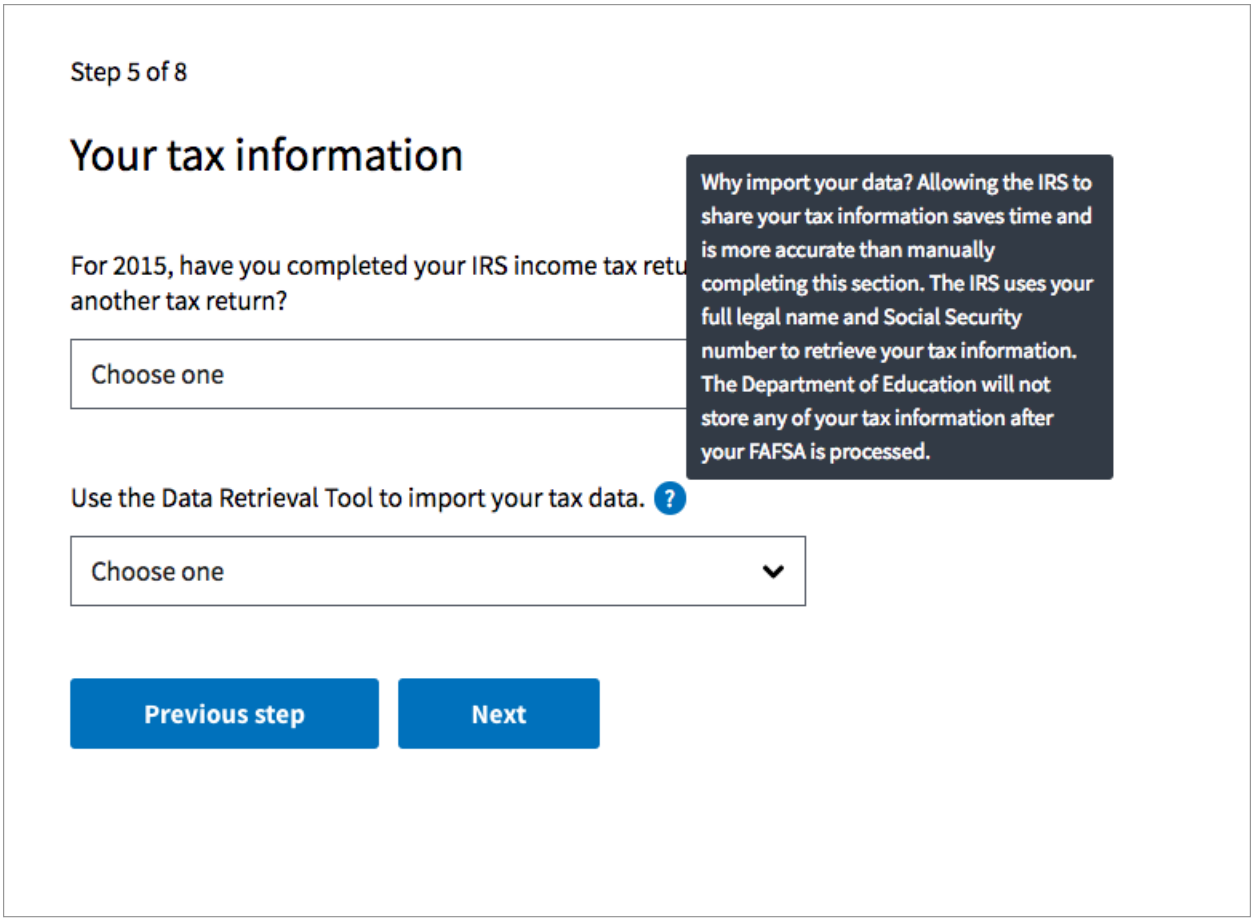
how information sharing could provide better government experiences for the largest possible sample of the public.

Finally, the current FAFSA includes an example of information sharing: the Data Retrieval Tool. The Data Retrieval Tool is a mechanism that allows a person completing the FAFSA to automatically import relevant data from the IRS's records of their previous year's tax returns, thereby reducing the amount of work required to complete the FAFSA. The tool, in its current form, alerts users to the fact that their data will be shared (from the IRS with the Department of Education), but the sharing experience is somewhat buried in the context of the larger form. Our prototype considerably shortened the form, thereby highlighting the sharing experience. This allowed us to more effectively and efficiently test the concept of information sharing and develop a better understanding of how real users feel about the process.



A view of the bonus services page, which invited participants to apply for additional optional services after submitting their Application for Naturalization.

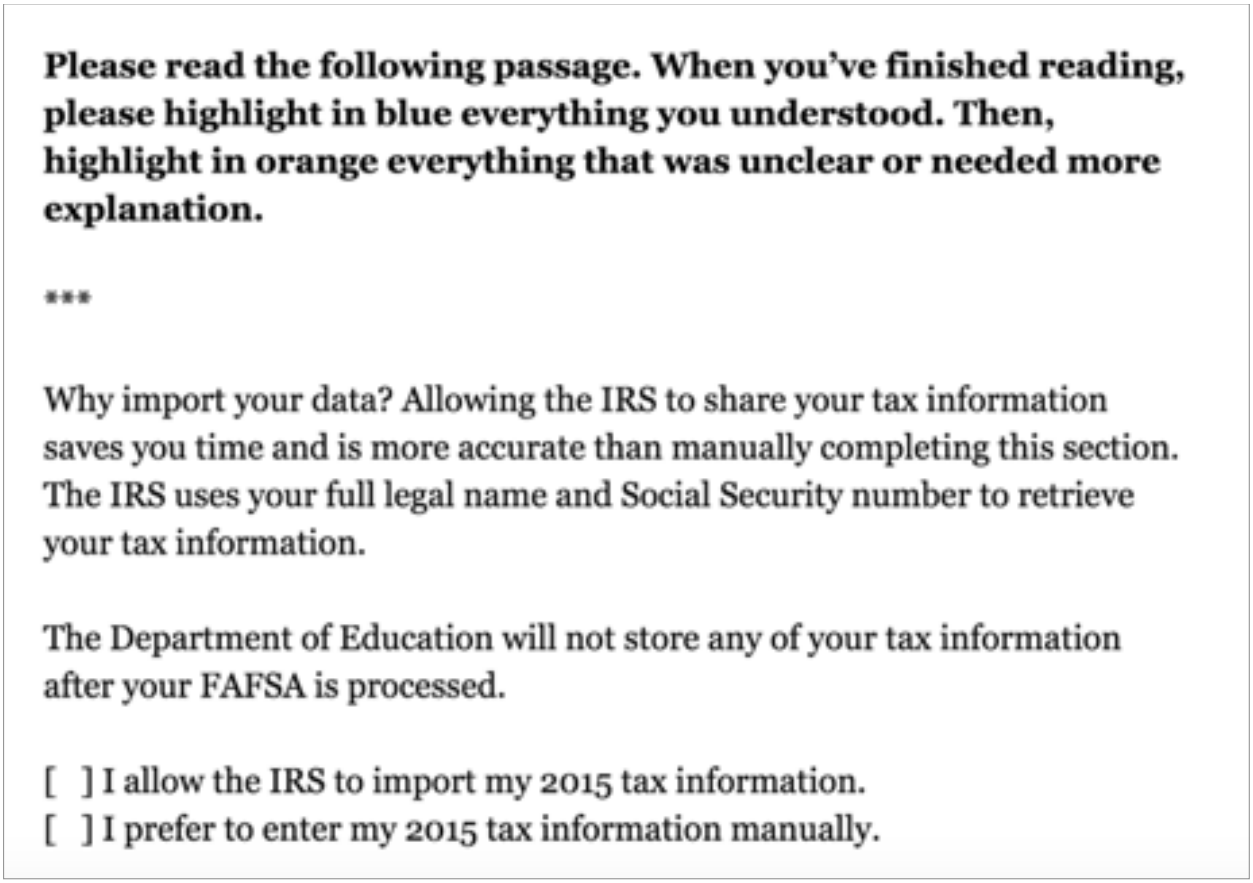
As we designed this prototype, we also wrote new form-field descriptions and contextual content such that we could test all three of the aforementioned hypotheses. In instances where the original questions weren't written in plain language, we rewrote them to make them easier to understand. We employed a friendly, reassuring, and official tone to signify the magnitude of the sharing decision users had the opportunity to make, and we provided straightforward explanations of what information sharing, in this context, would entail.



Help text like this provided users with necessary context about the circumstances of information sharing.

During the week of November 14, 2016, we conducted our first round of prototype testing in the San Francisco Bay Area. Over the course of three days, we met 11 participants in their homes and observed them as they interacted with our prototype.

Along with more general prototype testing, we also conducted highlighter testing on the content featured on the Data Retrieval Tool screen. This content alerted users to the fact that they could choose (or decline) to import their tax information, and explained how that information would be shared and stored. During the highlighter test, participants used one color of marker to highlight all of the sections of text they found understandable; then, using a different-colored marker, they highlighted everything that needed more explanation or that was unclear. By and large, our participants found this contextual content easy to understand, though a deeper discussion of our test results appears in the Findings section of this report.



Please read the following passage. When you've finished reading, please highlight in blue everything you understood. Then, highlight in orange everything that was unclear or needed more explanation.

***

Why import your data? Allowing the IRS to share your tax information saves you time and is more accurate than manually completing this section. The IRS uses your full legal name and Social Security number to retrieve your tax information.

The Department of Education will not store any of your tax information after your FAFSA is processed.

[ ] I allow the IRS to import my 2015 tax information.
[ ] I prefer to enter my 2015 tax information manually.

Highlighter test text from our first round of prototype testing.

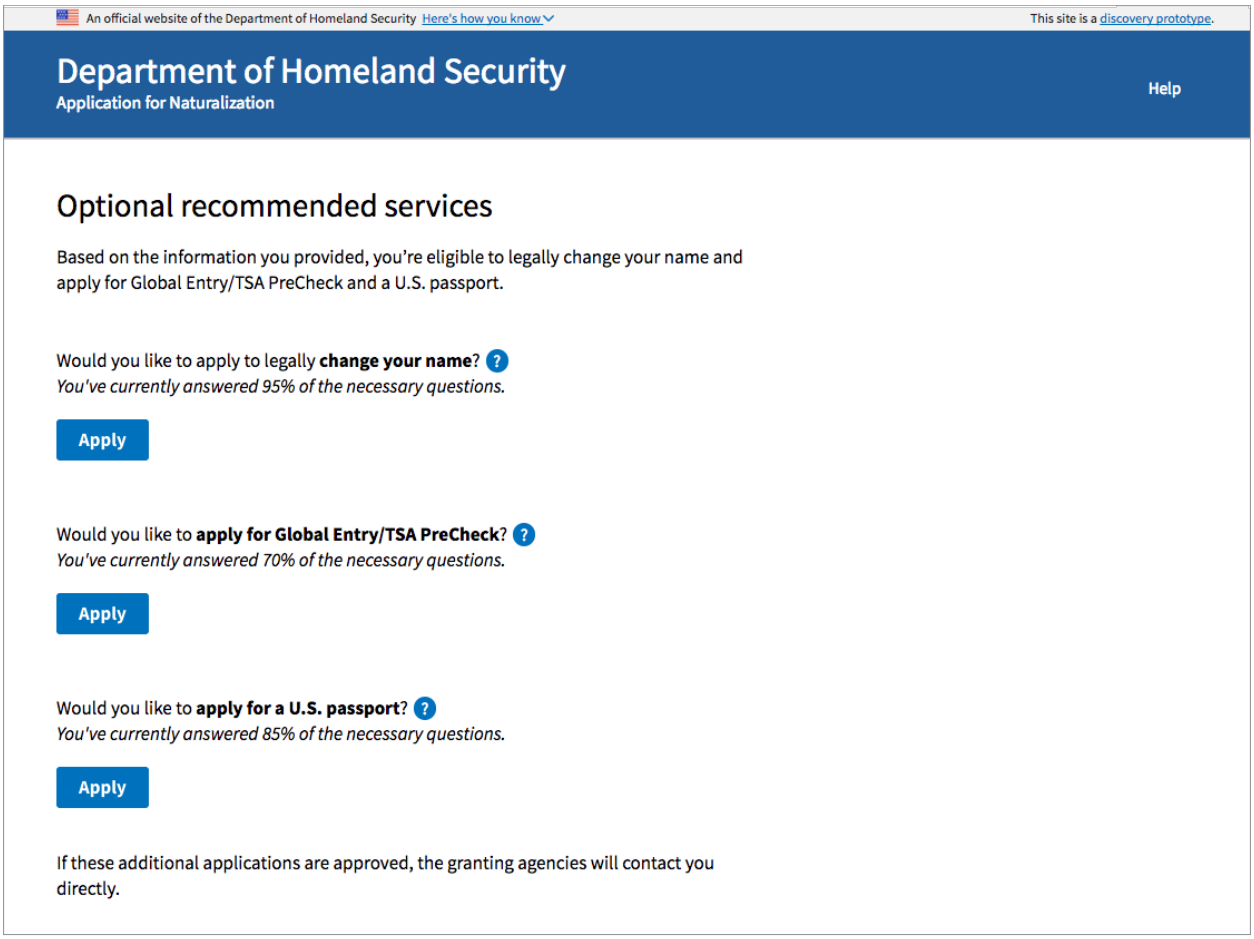
Round 2 research

Our second phase of end-user-focused research sought to investigate these additional hypotheses:

- Users would feel more confident with data sharing if they had more information about the data that is being shared, how it will be used, and how it will be stored (or discarded).
- Users will be more likely to engage in data sharing to unlock additional government services when there is **little to no additional information** required beyond the information they've already provided.

Rather than creating another prototype based on the FAFSA, we chose to replicate the N-400: the Application for Naturalization. Creating a prototype based on this form would allow us to more easily test our new hypotheses — that users would be more inclined to share information (in the process of seeking a benefit or service) if they're required to provide no or little additional information, and that users would appreciate additional information about how their data is being shared and stored. As we brainstormed ideas for our second prototype, we recognized that the U.S. citizenship application process requests much of the same information as a number of other benefits and services, among these applying for a U.S. passport and applying for TSA PreCheck/Global Entry. Knowing this, and wanting to identify the burden threshold at which users stop feeling comfortable sharing their information, we created a prototype, based on the N-400, that offers "add-ons" — additional services or benefits one can apply for immediately after completing another form.

In the case of our prototype, users who are applying for citizenship can, immediately after submitting their Application for Naturalization, apply to change their name, apply for a passport, and/or apply for TSA PreCheck or Global Entry. The complementary applications for these add-ons increase in complexity (ergo burden); these mini applications with tiered complexity allowed us to observe users' attitudes toward straightforward, moderately burdensome, and more burdensome information-sharing situations. In turn, this helped us parse which concept users may struggle more with: *the principle of information sharing, or the actual workload associated with information-sharing tasks*. Defining whether users experience hesitation toward principle of information sharing or the associated workload could help inform the direction of subsequent research, prototyping, and product development.

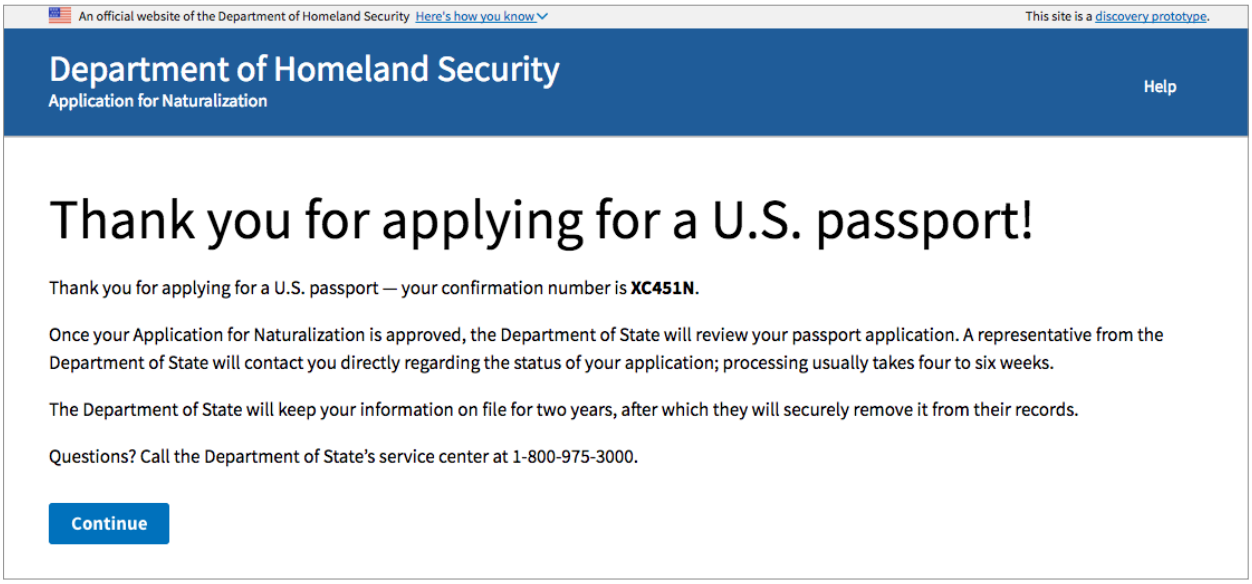


A view of the bonus services page, which invited participants to apply for additional optional services after submitting their Application for Naturalization.

Although we created our first prototype with an emphasis on clearly communicating information-sharing-related concepts, some of our users reported wanting even more detail about which agency or agencies would be receiving their data, why, and how that data would be treated post-transmission. To create a more satisfying and comfortable user experience, we increased the amount of explanatory copy in this prototype. Once a user applied for one or more of the add-on services, they were shown relevant confirmation screens, which contain the following information:

- A confirmation number
- A description of what happens next and the predicted wait time
- The name of the agency responsible for processing the information
- Contact information for the processing agency

Providing the user with this information once they've submitted bonus applications was intended to increase the user's comfort level and sense of agency. This content could not only give the user a sense of what to expect (and when), but also provide them with information they need to learn more about the process in general and their application in particular.



Each add-on service application was followed by a confirmation screen; one such screen is pictured above. The application-related information we included (processing time, contact information, and so on) is made up, but it does lend an air of authenticity to each confirmation screen.

During the week of December 19, 2016, we conducted our second round of prototype testing in Chicago, IL. Using a combination of on-site and remote interviewers, we interviewed nine participants to get their impressions of our prototype and the associated content. As in the first round of testing, we also conducted highlighter tests on the Optional Services Page (sometimes referred to as the Bonus Services Page) and confirmation screens for the add-on services.

Generally speaking, participants felt comfortable applying for bonus services in a manner facilitated by information sharing. Their comfort was increased by the prototype's progress indicator, which let them know how close they already were to completing applications for the add-ons. That said, some participants expressed apprehension about how their applications for the add-on services might impact their Applications for Naturalization; these participants worried that the information they shared for the bonus services might somehow jeopardize their likelihood of gaining citizenship. Confirming one of our two new hypotheses, participants also appreciated the extra information about who would receive their data and what they could expect after submitting their applications, though several people noted that they would have liked that information prior to submitting their add-on applications. For a more in-depth discussion of our findings from this phase of testing, please see the Findings section.

Limitations

Our team structured our research and testing to be as comprehensive as possible, given our comparatively tight timeline. Even so, we faced some limitations. These included:

- **Difficulty connecting with selected agency representatives**: Although we diligently pursued contact with people at various agencies, not everyone we contacted was able to meet with us. In some cases, people at agencies that had independently developed sharing systems weren't able to share the legal and technical details of these systems; these folks were concerned about potential security issues and/or had obligations to notify their partner agencies if they wanted to discuss legal and technical details of their systems.
- **Differing interpretations of round 1 hypotheses:** While we were building our round 1 prototype, we discovered that different people on our team had different ways of conceptualizing what we'd actually be testing. In other words, we didn't sufficiently crystallize which hypotheses we'd be testing until we'd already begun building the prototype. This required us to rebuild certain screens of the prototype so that they featured fewer questions, resulting in a bit of lost time.
- **Difficulty finding qualified participants**: For our first round of testing, we had difficulty finding participants from all the verticals we'd specified. Likewise, during the second round of testing, we had some trouble finding participants who had completed the N-400 themselves.
- **Homogeneity of round 1 test participants**: Related to the previous limitation, the participants recruited for our first round of prototype testing were relatively similar in

terms of tech literacy, life stage, and geographic location. (**Note**: We requested a diverse group of participants and designed a screener (questionnaire for participants) to this effect.) The comparative homogeneity of the group made it difficult to extrapolate our findings to a broader base of potential users — for example, folks with lower tech literacy and those who live in rural areas.

- **Participants' familiarity with prototype tasks:** Because our prototypes were based on actual tasks, participants who had completed those tasks (or know people who did) were already accustomed to the tasks in their current state. This familiarity may have caused some participants to be more comfortable with the concept of information sharing than they would have been if the tasks were entirely new to them.

Findings

With our agency-focused research and prototype testing complete, we synthesized our observations, identifying trends among them. Our findings don't encompass every observation we made during our research and testing; rather, they represent the most common — and potentially impactful — observations.

For ease of reading, we've divided our findings section into two subsections: Agency findings and End-user findings. Both sets of findings form the basis for the Potential next steps section.

Agency findings

1. **Information sharing is more common than we initially predicted**. We began this project with the assumption that information sharing between departments or agencies is uncommon. This turns out not to be the case: Many agencies have sharing agreements (of various sorts) in place. Some agencies share information using Computer Matching Agreements — this is more common in cases where agencies aren't required to secure end users' permission for sharing — while others use other legal and policy vehicles such as Memoranda of Understanding (MOUs). We're considering cataloging these vehicles to identify best practices; if we're unable to create the catalogue ourselves, we plan to promote the idea of creating one. Even if this undertaking isn't currently in scope, it might be worthwhile, should GSA decide to pursue information-sharing research and project work.

2. **Agencies don't draw their users' attention to their information-sharing policies**. We built our prototypes to explicitly communicate details of information-sharing practices to end users. One of our assumptions going into this project was that if agencies were engaging in information sharing, they'd alert their users to this fact. As it happens, most agencies engaged in data sharing are doing so *without* explicitly telling the user or offering the user a choice to opt out. In general, this sharing isn't optional and is done for purposes that could be broadly described as enforcement or verification. Some examples of this type of sharing include checking a user's selective service registration status, checking whether a user has honestly reported all out-of-country trips, and so on. Because this type of sharing isn't optional (and therefore isn't contingent on an end-user's permission), it may not require the same type of contextual communication that opt-in sharing would.

3. **The number of potentially beneficial sharing situations appears to be lower than we predicted**. Another of our key assumptions at the outset of this project was that there were likely many use cases where it would save citizens time and effort to offer a data transfer between federal agencies. While *how many* such use cases there are remains an open question, we've so far uncovered fewer than 20, with a number of those being unvalidated, extremely challenging (for example, sharing between the Department of Veterans Affairs and the Department of Defense is a well-known, decades-entrenched quandary), or already under

way the agencies involved (as with the IRS and both the Department of Education and the Department of Health and Human Services). Several cases that initially seemed to offer convenience for an individual (for example, SNAP and National School Lunch Program applications) involved federal programs for which the program is administered — and the data is held — at the local government level.

The most promising and so-far-unserved use cases appear to be related to people's business lives rather than their personal lives. During the latter part of sprint 5, we began exploring a case involving the Forest Service (USDA) and the Bureau of Land Management (Department of the Interior). Both agencies have permit applications that require substantially overlapping data from applications, and both agencies are exploring ways to merge or otherwise simplify their processes to benefit their users.

4. **"Collect once, distribute widely" might be a more beneficial model than one-to-one sharing**. Our conversations with the Bureau of Land Management and the U.S. Forest Service late in the project led us to consider a model of information-sharing that's substantially different than the one we'd initially conceptualized. The "collect once, distribute widely" model would allow end users to enter their personal information once and would then distribute relevant portions of that information to the various agencies with which the user needs to engage. Although we didn't test this model, it seems as though it would offer the benefits of easier task completion and reduced redundancy. It could also shield the end user from the complexities of agency-specific jurisdictional minutiae, which aren't central to a positive user experience.

That said, this model presents unique challenges that implementing agencies will need to consider. Currently, agencies may have difficulty getting end users to recognize their status as the canonical source of a certain type of information (e.g., tax information). Future research could investigate how users feel about signing up for a stand-alone service that stores their personal information (e.g., how users feel about sharing information with a non-canonical source), along with whether end users' opinions toward that service would change if certain forms were pre-populated with information the user provided during the signup process for a different service or benefit.

End-user findings

1. **Many users are comfortable with information sharing**. Contrary to what we'd hypothesized, many of our participants felt comfortable sharing personal information with the government and having agencies share that information with each other. During our first round of testing, as participants worked through the prototype, very few showed any signs of hesitation. One participant even noted, "I'd feel safer if the government had **all of my information** [including SSN]" (emphasis ours). Echoing this sentiment, another participant stated that she's more comfortable sharing personal information with government agencies — and having government agencies share that information with each other — than with private companies, because "private companies have the potential to profit" from her personal

information. Our second round of testing confirmed this finding. Second-round participants were generally eager to share their information if it meant making the application process for optional services easier, although some participants were left with unanswered questions (namely, about the cost of the add-on services and whether or how information in the add-on applications might impact the chances of their gaining citizenship or the processing time of their Application for Naturalization).

2. **Life stage and the comparative "complicatedness" of one's situation impact people's attitudes toward information sharing**. Many of our round 1 participants were first-time college students of traditional college age (18 to 22 years old); only a few of our participants were non-traditional students or parents of students. Of our participants, those who hadn't previously completed taxes (or who reported having "little to lose") seemed to feel more comfortable with the concept of information sharing than those with comparatively more to lose. To the contrary, one participant who completed the FAFSA on behalf of her sons said, "I would not want to give certain information, but I have no choice…" This participant only allowed information sharing when it was the only means to accessing federal services. The results of our second round of testing led us to a similar conclusion. A few round 2 participants worried that the answers they provided during the optional services applications might negatively impact their primary goal of gaining citizenship — they wondered whether these answers would be "used against them" in their citizenship application.

3. **Many users prioritize ease of experience over potential risks**. For many participants, completing the FAFSA was a relatively predictable experience; these participants could estimate, based on past years' awards and their current financial situations, approximately how much aid they'd receive. Some participants wondered why they couldn't import their data from the previous year into the FAFSA they were currently completing. Very few participants in our first round of testing hesitated before electing to use the Data Retrieval Tool, and all participants chose to import their data using the tool rather than entering it manually. Conversely, the Application for Naturalization is in some ways a less familiar task — unlike the FAFSA, it is not completed on an annual basis. Although round 2 participants also tended to prioritize ease of experience over potential risks, they also seemed to more deeply consider the implications of information sharing before electing to complete applications for add-on services. Even so, round 2 participants appreciated the opportunity to apply for add-on services, and all participants elected to apply for at least one bonus service.

4. **Users prefer contextual information up front rather than after the fact.** During our second round of prototype testing, we sought to validate the hypothesis that users would feel more confident with data sharing if they had more information about the data that is being shared, how it will be used, and how it will be stored (or discarded). We presented this information to users on confirmation screens that appeared *after* they'd completed the applications for add-on services, and we found that our participants would rather have had access to this information *before* applying for bonus services.

Participants seemed to approach the add-on applications with caution, not because they were unwilling to apply for these services, but instead because they anticipated there being a "catch" of some sort — that the applications wouldn't work as well as promised, or that their information might be used in a way that could have adverse effects. Although the confirmation screens provided the answers to many common questions, we found that some users were hesitant about proceeding because their questions weren't answered prior to their completion of the bonus applications (i.e., their agreement to authorize information sharing). This suggests that in streamlined services that require the user's active consent, there is such a thing as being too streamlined. Future research could beneficially explore how best to provide contextual information without overwhelming the user.

5. **Users prefer explicit descriptions of the benefits of information sharing**: Somewhat related to the previous finding, we also observed that users prefer explicit descriptions of how information sharing will benefit them; this information may assuage anxiety they're feeling about sharing and convince ambivalent users to opt in to optional sharing. We found that people are less worried about agencies sharing information with each other than they are about sharing information with the government in the first place. However, people's decisions around information sharing are complex, and privacy isn't their only concern. If end users feel that a sharing activity may add time or complexity to their primary task, they may be disinclined to complete a secondary task that relies on data sharing. Likewise, potential adverse consequences (as described in the previous section) can impact users' decisions to allow sharing. Using plain language to detail the benefits of information sharing, and the impact of that sharing on the current task or process, can help users make more informed decisions.

Although our findings show that users prefer detailed descriptions of the benefits of information sharing, we also found that too much information about how agencies will use and store their data can be confusing. Our second prototype's confirmation screens provided information about how long each agency would store a user's information, which some participants interpreted as a call to action to reapply for the given service or benefit.

6. **Users may not understand agencies' missions or the relationships between agencies**. Earlier Federal Front Door research found that many members of the public view the government as monolithic — that they don't distinguish between agencies and view the federal government as one united entity. We observed similar trends in our research. During our first round of prototype testing, several participants admitted to not knowing what the IRS is and does. Likewise, many participants believed the FAFSA was an agency or department rather than a form. During our second round of testing, several participants thought that passports were issued as part of the naturalization process, and some participants were unclear about which agency administers the PreCheck and Global Entry programs.

This view of government as a monolithic entity presents special challenges in communicating clearly about information-sharing practices. Before considering how, precisely, to communicate details of information sharing, agencies may wish to consider how to communicate about themselves. In other words, they should weigh the benefits of leading with content about their

mission and relationship to the agencies receiving the end users' information and opening with content that's focused on end-user-specific benefits of information sharing. Both approaches could be beneficial, but the success of each is largely contextual.

Potential next steps

Our research revealed that use cases for information sharing of the sort we initially envisioned aren't as plentiful as we expected, although there may well be enough to justify further work. Several of the most valuable data-sharing use cases are already covered, and best practices have been established independently by other agencies, notably the IRS in its partnerships with the Department of Education and the U.S. Department of Health and Human Services. The current best practices for information sharing seem to be working well, although advances in information sharing will undoubtedly bring about updates to those practices.

There are several ways the General Services Administration (GSA) could help encourage these best practices to be more widely used across government:

1. Establish policy, technology, and design guidance for information sharing, perhaps in concert with OMB, and publish it in such a way that it's accessible to people at all agencies.

2. Use existing programs like 18F's consultants or TTS's acquisitions group to help pairs of agencies jointly build digital services that embody the best practices.

3. Build a centralized technical capability for data sharing — whether the data in question are stored centrally or not — and offer it as a product to pairs (or groupings) of agencies.

These are listed in order of assumed scale of investment, but each should be evaluated against GSA's investment goals.

Agencies interested in pursuing further information-sharing research (including, potentially, the GSA) should be heartened by the fact that many users are comfortable with the concept of data sharing and enthusiastic about the more efficient online experiences it can bring about. The goals of any agency pair or group seeking to implement information-sharing practices should necessarily align with the goals of the Federal Front Door initiative: to provide the public with greater government transparency and better experiences across the board. As we've seen — at least preliminarily — well-considered instances of information sharing can achieve both.