**Vertical 14. Human-Centered Design**

|  |
| --- |
| **Deliverables:**   1. **An “elevator pitch,” which provides highlights of the content, such as why the approach is important, how it works, and examples of where it has worked** 2. **A short, digestible summary of underlying premises and rationales, supported by research (i.e., not a report)** 3. **Profiles of major categories of candidate users, including specific examples of when, and under what circumstances, the approach may be employed, supported by research into the target audience and their needs** 4. **One or more “success stories” or other learning narratives that highlight the impact of and justification for using this approach.** 5. **Documentation of challenges to deployment, and potential limitations of the approach, including barriers or obstacles encountered within agencies employing the approach** 6. **A “How-To” document, detailing key steps for deploying the approach, including promising practices in adaptation and deployment** 7. **An online inventory of resources** 8. **Examples of policy (e.g. legislation, Executive Order, etc.) that have enabled or encouraged the approach** 9. **Future directions (next practices as opposed to best practices)** |

# *Note: This content was developed in concert with the human-centered design community of practice over the course of several months. While the crowdsourced nature of the document meant that specific authorship attribution was not possible for all areas, content was reviewed and vetted by the community of experts.*

# Pull Quotes

“Human-centered design is a growing phenomenon across international, regional, and local boundaries. This is both an innovative approach to solving some of society’s most pressing problems as well as an avenue for better public engagement and partnerships [Brown, P. “[Human-centered design in the US Federal Government](https://www.innovations.harvard.edu/blog/human-centered-design-us-federal-government)”, Harvard Kennedy School, Public Management Blog, March 10th, 2016]

“In my experience, convincing leadership that human-centered design works comes at various stages in the process. You need it to embark on the effort to begin with, and then to scale by demonstrating outcomes and value.” Emily Tavalouareas [Tavoulareas E., personal communication with Office of Science and Technology Policy]

“If human-centered design can guide us towards a human-centered process, that accommodates how people work, how they like to discover and consume information, we’re all the better for it,” Matt Conner, Acting CISO and Director of Cybersecurity Office at the National Geospatial Intelligence Agency [quoted in Lane, K., “[How Human Centered Design Can Help Your Agency](https://www.govloop.com/how-human-centered-design-can-help-your-agency/)”, GovLoop, September 6th, 2016]

# Deliverable 1. Introduction and summary

# Introduction

Human-centered design (HCD) is a discipline in which the needs, behaviors, and experiences of an organization’s customers (or users) drive the design of a solution to a particular problem. A creative process for identifying, defining, and solving complex problems with a rigorous focus on the user, HCD is also a set of principles that can guide work across products, programs, and policy. Principles of human-centered design include empathy, iteration, collaboration, nonlinearity, making, and a bias toward action.

To respond to the needs of the American people, government needs nimble and creative approaches to truly understand and address the complex challenges of the 21st century. Human-centered design offers a way for government to more effectively serve its citizens by focusing on designing and building solutions for the user. It presents methods for understanding Americans through the social science lens of human behavior. It instructs on building inclusive processes for diverse groups of stakeholders, through which desirable, feasible, and viable consensus solutions emerge. [Human-centered design community of practice, personal communication with the Office of Science and Technology Policy, December, 2016]

## 

## Why

HCD offers a methodology and a conceptual framework for addressing complex challenges [IDEO, “[Design Kit: The Human-Centered Design Toolkit](http://www.designkit.org/resources/1)”, 2015]. This approach enables Federal employees to engage with the public as co-designers to identify and address the root causes of problems, rather than the symptoms [National Economic Council and Office of Science and Technology Policy, “[A Strategy for American Innovation](https://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf)”, October 2015]. It makes government more participatory and responsive, increases stakeholder engagement and cross-sector collaboration, offers insight into the needs, behaviors, and decisions of citizens, and equips us with tools for generating, testing, and improving solutions. Ultimately, using this methodology ensures that we are solving the right problem in a way that works for the people we serve. [Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]

## 

## How

Human-centered design can be used to understand, create, or improve Federal programs and services across agencies. [Human-centered design community of practice, personal communication with the Office of Science and Technology Policy, December, 2016] A human-centered design process includes three broad phases of work: research and discovery; ideation and prototyping; and piloting, testing and implementation. Individuals or project teams using this approach often use it to tackle problems with existing government services, or when a new solution is needed for an existing problem. [Human-centered design community of practice, personal communication with the Office of Science and Technology Policy, December, 2016]

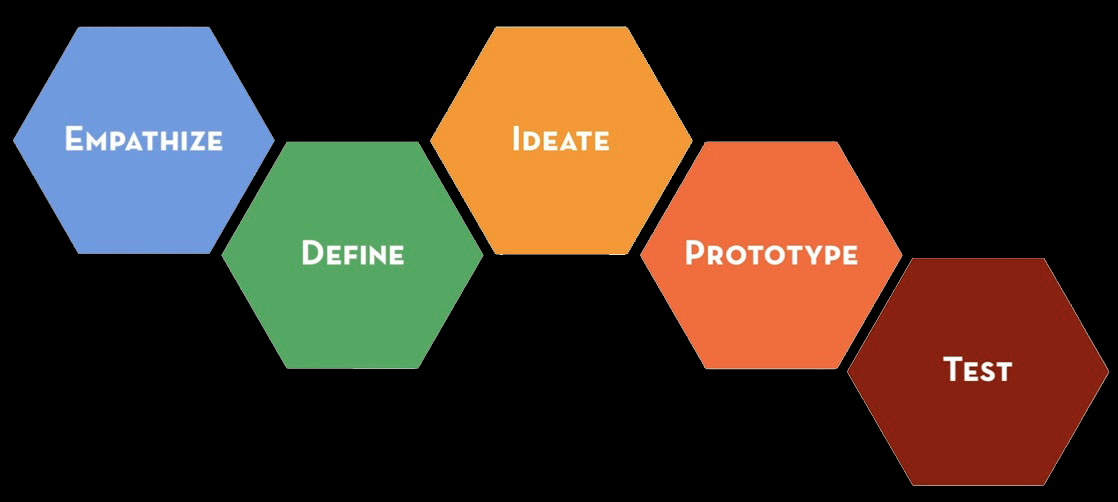
Human-centered design can be broken down into six, reinforcing principles that together create better products and services:

1. Adopting multidisciplinary skills and perspectives
2. Clear understanding of the users, tasks and environments
3. User-centered, evaluation-driven design
4. Considering the overall consumer experience
5. Involving the consumer in the design and production process
6. Iterative design process

[Elmansy, R.,"[Characteristics of Human Centered Design](http://www.designorate.com/characteristics-of-human-centered-design)", Designorate]

# Deliverable 2. Summary of underlying rationales / empirical research

Human-centered design is based on the physical and psychological needs of the human user. It is not a design style. It is an iterative process or “cycle” that combines mindsets with methods to design and develop buildings, products, services and communities grounded in the experience of real people. [IDEO, “[Design Kit: The Human-Centered Design Toolkit](http://www.designkit.org/resources/1)”, 2015] The goal is to place the end-user (i.e. the human) at the center of the process, and design for their needs. Designers use the process to uncover solutions by understanding how the user is interacting with and experiencing the problem. [Greenhouse, E., “[Human-Centered Design](https://aging.ny.gov/LivableNY/ResourceManual/TableOfContents.pdf)” in the Livable New York Resource Manual, 2015]



[Stanford Design School, “[An Introduction to Design Thinking: Process Guide](https://dschool.stanford.edu/sandbox/groups/designresources/wiki/36873/attachments/74b3d/ModeGuideBOOTCAMP2010L.pdf?sessionID=e62aa8294d323f1b1540d3ee21e961cf7d1bce38)”, accessed December, 2016]

The HCD process first aims to define the problem. Data is collected through direct experiences with the user by applying the lens of “empathy.” Empathy allows the designer to immerse themselves in the problem, with the aim of seeing the world through the eyes of the person for whom they are designing. It is the first phase of an iterative and continuous design cycle. By designing for the user, products and services can be tailored directly to the users’ needs. [Stanford Design School, “[An Introduction to Design Thinking: Process Guide](https://dschool.stanford.edu/sandbox/groups/designresources/wiki/36873/attachments/74b3d/ModeGuideBOOTCAMP2010L.pdf?sessionID=e62aa8294d323f1b1540d3ee21e961cf7d1bce38)”, accessed December, 2016]

Immersion and empathy are critical to the design process, and help the designer define the problem. The problem is diagnosed as designers ask the question, “*What is the problem we are trying to solve*?”, and situate themselves in the shoes of the user. By applying qualitative inquiry to problem observation, “you can see what a person is going through. But when you actually experience it, you can really understand how difficult somethings may be for the user and what emotions the challenges are creating for people. You can better appreciate how challenging something is when you try to do it yourself.” [Zenios, S., “[Design Thinking is about doing](https://www.youtube.com/watch?v=IzNv3CXSE9I)”, Stanford d.school video].

As often as possible, designers use a set of tools to interact directly with users to gain user perspective and prevent designer bias. Designers can then better diagnose the problem and develop prototypes to suit the needs of the end-user. “Great ideas are ideas that solve a problem in a unique way,” which generally occurs when two existing ideas are adapted and combined to form a solution. [Zenios,S. “[Design Thinking is about doing](https://www.youtube.com/watch?v=IzNv3CXSE9I)”, Stanford d.school video, accessed December 2016]. Designers often pose “How might we?” questions to reframe the problem from a solutions mindset, viewing every problem as an opportunity for designing an innovative solution. [“[Design Kit: The Human-Centered Design Toolkit](http://www.designkit.org/methods/3)”, IDEO, 2015]

Designs can then be shaped and oriented toward the “cognitive abilities, physical abilities and limitations, social needs, and task requirements” of the user to “provide living-environment solutions that enable all users to function at their highest capacity—regardless of age or ability.” [Greenhouse, E., “[Human-Centered Design](https://aging.ny.gov/LivableNY/ResourceManual/TableOfContents.pdf)” in the Livable New York Resource Manual, 2015] Rapid ideation (or brainstorming) is used to develop as many ideas as possible to solve the problem for the user(s). Through the rapid ideation process, the best ideas are identified and developed into prototypes which are tested in real-life situations. Close assessment of the effectiveness of prototypes among users allows designers to make quick improvements and eventually select and scale a well-designed final product or service.

The principles underlying human-centered design are derived from multiple disciplines—from community design, to architectural design, to interior design, industrial design, and design of communication venues. The interdisciplinary nature of its evolution is a key ingredient to the design process, as diverse perspectives help spark new ideas and combine to form creative solutions to complex challenges [Acumen Foundation, “[An Introduction to Human Centered Design: The Design Process](http://plusacumen.org/wp-content/uploads/2014/04/Class_1_readings.pdf)”, accessed December, 2016]. As Steven Johnson, author of [*Where Good Ideas Come From: The Natural History of Innovation*](http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from)explains, throughout history the best ideas have come through collaboration, as “chance favors the connected mind” [Johnson, S., *Where Good Ideas Come From: The Natural History of Innovation*, Riverhead Books, 2010].

# Deliverable 3. Profiles of major categories of candidate users - examples of when to deploy

When and where to deploy HCD:

|  |  |
| --- | --- |
| **Level within government agency** | **How to support and encourage the deployment of human-centered design** |
| Front Lines | * Collaborate with team members with different responsibilities * Advocate for collaboration with other offices * Investigate sociological research on specific countries, communities, or populations to inform language, and style of deliverables * Create multiple advertising messages targeted at values of specific audiences * Develop a multitude of user experience decisions for digital and physical products, services, and applications aimed at improving the flow and access of information * Construct a multitude of user interface decisions that impact the usability of digital and physical products, services and applications for users with disabilities * Examine and research culturally and regionally-significant colors for design * Develop a list of everyday HCD practices for your specific office and circulate the list |
| Mid-level | * Create space for collaboration * Support flexibility and ambiguity of project * Serve as a buffer for your project team’s work * Propose policy, guidelines, and standards that institutionalize better usability on digital in general and specifically for people with disabilities * Build partnerships with other offices with similar audiences * Create office hours for other employees to come learn about your offices’ HCD practices * Meet with other agencies who are leaders in HCD * Advocate for dedicated resources to HCD projects |
| Executive | * Broadcast HCD projects to other offices across agency * Support information sharing and developing software * Sit in on project team meetings to show support from the executive level as well as stay informed on HCD processes * Advocate for increased collaboration on multi-agency campaigns * Advocate for HCD as a business imperative that helps organizations deliver on their mission promises |

[Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]

A number of agencies are using human-centered design broadly to support their missions:

* The [Innovation Lab at OPM](https://www.opm.gov/blogs/Director/2015/5/21/OPMs-Lab-Leading-Government-Innovation/) has engaged in a redesign of [USAjobs.gov](http://fedscoop.com/opm-innovation-lab-leads-usajobs-rebuild-with-agile) and the [Free and Reduced School Lunch](https://www.whitehouse.gov/blog/2015/09/04/using-human-centered-design-make-government-work-better-and-cost-less) program application form.
* The Department of Justice and [Health and Human Services](https://www.hhs.gov/idealab/about/) have improved their organizations by introducing incubators that use design principles in team-based projects.
* Members of the [Intelligence Community](https://www.govloop.com/how-human-centered-design-can-help-your-agency/) have developed better tools for analysts and to train them in creative methods for problem solving.
* [GSA and 18F](https://18f.gsa.gov/2015/09/01/govconnect-launch/) have streamlined Federal acquisitions and increased the collective buying power of Federal government.
* The State Department’s [Collaboratory](https://eca.state.gov/programs-initiatives/collaboratory) has pursued Education Diplomacy overseas and improve organizational structures and program design in functional bureaus.

**Deliverable 4. One or more “success stories” or learning narratives to underscore impact**

Case study profiles

* Case study 1 – Department of Labor (DOL)
* Case study 2 – U.S. Department of Agriculture (USDA) and the Office of Personnel Management (OPM)
* Case study 3 – Veterans Affairs Center for Innovation (VACI) – #hacktheforms
* Case study 4 – USAID - Sparking desire for HIV prevention methods: applying human-centered design to USAID’s global health goals
* Case study 5 – Department of Veterans Affairs

**Case Study 1:** **Department of Labor**

**Helping Americans Get Better Paying Jobs: How the Department of Labor is Applying Human-Centered Design**

*Case content provided by Virginia Hamilton, Regional Administrator at Department of Labor* [Hamilton, V., Regional Administrator, Department of Labor, December 2016]

**Background**

The Department of Labor (DOL) is actively promoting innovation within the public workforce system by inspiring the use of human-centered design (HCD) as a problem-solving method. DOL has used HCD to generate and create new approaches for workforce development. These efforts have garnered enthusiasm among state and local governments for HCD and encouraged the smart investment of government funds into HCD-based projects.

**Applying HCD**

In July 2015, the Department of Labor’s [Employment and Training Administration](https://www.doleta.gov/) (ETA) announced the [Customer Centered Design Challenge](https://ion.workforcegps.org/resources/2015/09/02/17/11/Customer-Centered_Service_Design_Initiative) (CCDC), encouraging workforce development professionals to develop innovative strategies for improving the public workforce system. This team-based initiative brought together a broad range of individuals, created teams dedicated to tackling workforce-related challenges, and provided opportunities for participants to learn how to develop, prototype, and implement human-centered design (HCD).

Prior to the CCDC, ETA did not experiment with HCD on a massive scale. Instead, HCD was promoted as a problem solving tool at the grassroots level. Previously, one of ETA’s [regional offices](https://www.doleta.gov/regions/regoffices/Pages/eta_default.cfm?CFID=837475024&CFTOKEN=47617638) engaged the firm, IDEO, in a training fir state and local governments on the use of HCD as a tool to address jobseeker and worker needs. Despite this limited scope, state and local workforce agencies were able to achieve a number of successes and demonstrated the potential and promise of HCD. Leveraging the increased awareness and use of HCD among individuals and states to improve workforce development strategies, ETA created CCDC to establish a nationwide initiative designed to promote further innovation within the public workforce system.

Each design team that participated in the CCDC took a seven-week online course taught by [Acumen](https://novoed.com/hcd-acumen) and [IDEO](https://www.ideo.com/work/human-centered-design-toolkit/), where they learned the design process; explored the main human-centered design concepts; and received technical assistance from DOL contractors to put those tools into action. Afterwards, each design team spent five weeks applying the ideas they generated and the insights gained during the online course. An [event summary](https://events-na2.adobeconnect.com/content/connect/c1/14339732/en/events/event/shared/920721773/event_landing.html?sco-id=920694443) offers more information about the Challenge’s five phases.

**Key Accomplishments**

Initially, 80 HCD teams – each of which consisted of four to eight individuals and represented over 40 states – volunteered to explore how they could improve the customer experience in a variety of work-force topics. Projects focused on improving one-stop centers (currently branded as American Job Centers), further integration of employers in sector strategies and career pathways, and the development of services and programs for out-of-school youth. Eleven teams presented their projects at a [White House event](https://blog.dol.gov/2016/02/18/how-wioa-is-inspiring-innovation-locally/) in February 2016.

Based on the high level of participation and interest, DOL announced [Round 2](https://www.workforcegps.org/events/2016/04/15/12/37/The_Customer_Centered_Design_Challenge_Launch) of the CCDC in March 2016, providing participants the opportunity to tackle questions previously not covered under Round 1. As of May 2016, roughly 500 workforce professionals, composing 120 teams, volunteered to participate, and 15 teams came to the White House for a learning exchange and celebration. As a result of these projects, recognizing HCD as an innovative, problem solving tool, states are promoting best practices within local workforce development organizations by providing grants to select HCD teams. For example, the State of California allocated up to $330,000 to test and refine design prototypes during Round 1 and allocated another $250,000 during Round 2.

Overall, over 1000 workforce professionals throughout the country have now been trained in HCD and continue to apply these methods in the implementation of the Workforce Innovation and Opportunity Act.

**To Learn More:**

* Visit the [Innovation and Opportunity Network](file:///C:\Users\Caraleigh\Downloads\•%09https:\ion.workforcegps.org\announcements\2016\02\23\16\35\New_Customer-Centered_Design_Approach_Service_Delivery) at DOL
* Watch the [DOL Customer Centered Design webinar](https://www.workforcegps.org/events/2015/11/18/10/41/Webinar_Series_Act_Now_Customer_Centered_Design)

## Case Study 2: USDA & OPM

*Case content provided by Arianne Miller, Deputy Director of The Lab @ OPM. This case study concerns a collaboration between the U.S. Department of Agriculture (USDA) and the Office of Personnel Management (OPM), which improved the USDA’s National School Lunch Program. Details are provided based on a discussion with Arianne Miller of the OPM’s Innovation Lab, as well as information from* [*a blog post*](https://www.whitehouse.gov/blog/2015/09/04/using-human-centered-design-make-government-work-better-and-cost-less.) *on the event.*

[Ramsden, M., personal communications with Office of Science and Technology Policy, December 2016]

## Lunch Money: Inter-Agency Collaboration for Innovation

**Background**

From May 2014 through April 2015, the USDA’s Food and Nutrition Service (FNS) partnered with the OPM’s Innovation Lab to solve enrollment issues with the National School Lunch Program. The National School Lunch Program provides healthy, reduced-cost, and free meals to over 30 million children each school day. Previously, those interested in participating in the program struggled to accurately complete the application forms. This led to improper payments, including under- and over-payments totaling approximately $1.9 billion in 2015. Hoping to improve the enrollment process and eliminate many of the costs associated with improper payments, the FNS turned to the Innovation Lab at the Office of Personnel Management (OPM)and human-centered design (HCD).

**Applying HCD**

Since the improper payments plaguing the FNS were often the result of human (in this case, parent) error, the FNS and Innovation Lab needed an approach that considered the experience of the human completing the program’s application form. Because HCD starts with the human, and builds solutions based on the human’s experience and needs, it was a perfect fit for the FNS. By partnering with the Innovation Lab’s HCD experts to solve the program’s enrollment issues, the FNS was able to identify the root causes of human error and specifically address those issues to improve outcomes.

The OPM Innovation Lab trained and collaborated with the FNS to conduct research, in-depth observations, and interviews with people who participate in the school lunch program, including families and school officials. The team determined that small, yet important factors were hindering parents’ completion of the application form. The team designed a new program application form that was one page long, provided more space for the parents to write their children’s names, and that was more simple and intuitive. Before releasing the form to school officials for approval, the form was tested with parents to ensure that the changes would positively impact the parents’ experience and accurate completion of the form. Finally, the form was approved by school officials and launched by the USDA in 2015

Additionally, the FNS found that in school districts where the poverty level rose above 90%, it was actually more fiscally responsible to approve all students within the district for the school lunch program than to correct the average number of improper payments. Blanket approval eliminates the risk of human error in the application process so the FNS can be confident that the district will not be awarded an “improper” amount which would require reimbursement.



[Source: Image retrieved from “[**The OPM Director’s Blog**](https://www.opm.gov/blogs/Director/2015/5/21/OPMs-Lab-Leading-Government-Innovation/)”, accessed December 2016]

**Key Accomplishments**

The FNS believes that the newly improved National School Lunch Program will reduce human error, which costs the USDA billions of dollars in over- and under-payments each year. With more accurately completed application forms, the FNS will correctly calculate reimbursement payments to schools for the meals that they provide. Additionally, blanket approvals in seriously impoverished school districts will save the USDA millions of dollars in overhead costs associated with correcting improper payments.

The FNS has set a goal to reduce the error rate among completed school lunch program applications from 15.8% in 2015 to less than 10% by the 2019-2020 schoolyear. The FNS and the OPM’s Innovation Lab are confident that the improvements made through HCD will help the FNS meet their goal.

**To Learn More**

* Follow the [OPM Innovation Lab](https://twitter.com/LABopm) on Twitter
* Read more on the [Harvard Kennedy School of Government blog](https://www.innovations.harvard.edu/blog/human-centered-design-us-federal-government)
* “[USDA Announces Progress in Reducing Improper Payments in School Meals”](http://www.fns.usda.gov/pressrelease/2015/fns-0005-15) USDA press release

## Case Study 3: Veterans Administration Center for Innovation

*This case study was developed through conversations with Sarah Brooks, Amber Schleuning and Andrea Ippolito at VACI. The case offers an overview of a VA-sponsored hack-a-thon in May 2016. Details are provided based on discussions with various stakeholders involved: Amber Schleuning, and Andrea Ippolito from the VA Center for Innovation in Washington DC, and Dr. Saurabha Bhatnagar from the VA Innovators Network @ Boston, as well as information from* [*a blog post*](https://medium.com/@VAInnovation/re-designing-the-first-impression-hacking-va-intake-forms-16b94be0a415.) *on the event.*

[Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]

## #HacktheForms using human-centered design: How Hack-a-Thons (or Design-a-Thons) are used in the U.S. Government

**Background**

On May 7, 2016, the [Veterans Administration’s Center for Innovation](http://www.innovation.va.gov) (VACI) brought together designers, developers, and veterans to spend a Saturday working on a human-centered design (HCD) challenge – to redesign mental health intake forms that are used by Veterans to request access to VA services. Although the event took place in both Boston and Atlanta, this case study provides an overview of the Boston event. The event was a “hack-a-thon,” a time-constrained event in which individuals and groups are invited to participate and co-design a solution. Participating teams comprised people with many different backgrounds and expertise. The event involved designers from Mad\*pow (the design firm that hosted the event), designers and developers from the Boston community, veterans, staff members from the Veterans Benefits Association, and VACI staff members, totaling 21 people. The attendees were split into three teams and were tasked with developing prototypes using an HCD processes.

**Applying HCD**

[Previous HCD work by VACI](http://www.innovation.va.gov/docs/VeteranAccessToMentalHealthServices.pdf) focused on understanding Veterans’ experiences related to accessing mental health services. The team learned that the mental health intake forms are a barrier to access and could re-elicit trauma. For example, intake forms for veterans suffering from Post-Traumatic Stress Disorder (PTSD) required the veterans to recount the experiences that caused their PTSD. VACI wanted to ensure that the first step to accessing services was as straightforward and thorough as possible without causing unneeded trauma. To redesign the forms, a #hacktheforms event was planned. The #hacktheforms event was branded as a hack-a-thon (or as VACI describes it, a “design-a-thon”) to encourage all members of the community to collaboratively improve Veterans’ access to health services through co-design. Because the problem was complex and involved many different perspectives and experiences, the open #hacktheforms event continued the HCD process to design and prototype new intake forms based on an understanding of and empathy with Veterans’ experiences. HCD was well-suited for this challenge, because the previous intake forms, available for reference [here](https://github.com/department-of-veterans-affairs/hacktheforms/blob/master/VBA-21-0781-ARE.pdf), were not designed in a user-friendly way, not designed with a Veteran in mind, and not designed with the VA process in mind.

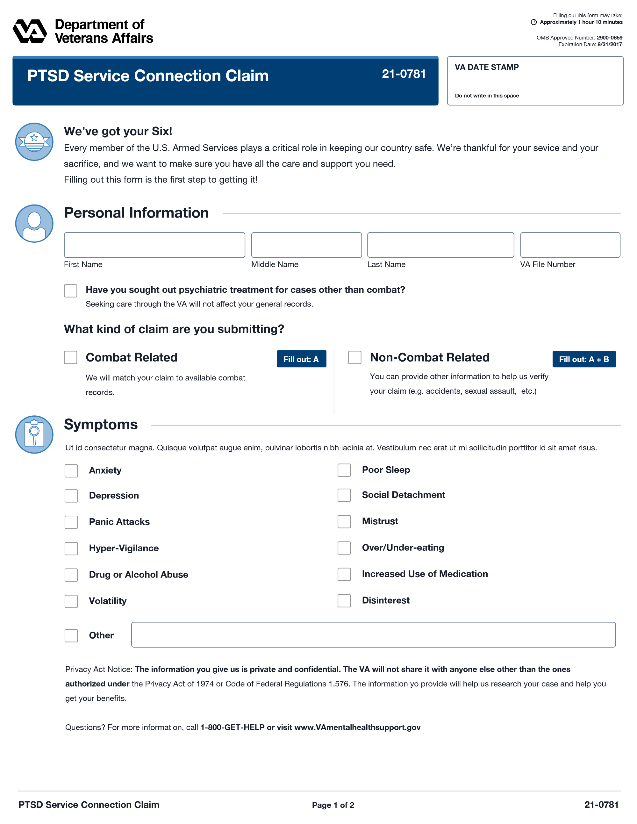
The day began with an objective: “Use this event as a starting point for a larger conversation on barriers to mental health services” and continued with collaborative co-design activities to create new intake forms. . Co-design activities involved iterative prototypes on paper, poster sheets, whiteboards, and computers, based on examples of intake forms as well as personas for VA mental healthcare. The personas had been developed previously in a 2014 HCD report entitled “[Voices of Veterans](http://www.innovation.va.gov/docs/Voices_Of_Veterans_11_12_4.pdf)” as well as Appendix 2 of the [2016 Veteran Access to Mental Health Services](http://www.innovation.va.gov/docs/VeteranAccessToMentalHealthServices.pdf) report.



**Image from the Event on May 7, 2016 from @D\_Peaceman:** “#[hacktheforms](https://twitter.com/search?q=%23HackTheForms) @VAInnovation Taking collaborative approach to redesigning access to mental health forms. Great work!!”

**Key Accomplishments**

Final proofs-of-concept focused on improving privacy, allowing veterans to know what steps were next in the process, making the forms more inviting by beginning with warmer words such as “thank you for your service” or “PTSD is normal”, and making the title clearer and shorter. The following excerpt from the VACI blog post further explains the success of the event:

*“Across both Atlanta and Boston, there were common design features in response to Veterans’ insights: recognizing Veterans’ service and highlighting that these forms are to ensure that Veterans’ receive the care they earned and seek; clearer and cleaner design that is accessible to all and not a struggle to understand; and clear explanations about the privacy of the information and details provided. Veterans who participated in hackathons were impressed by the new design prototypes, and even more so, by how powerful these forms could be for providing a better initial impression for Veterans embarking on the journey to seek mental health care in the VA.”*

The next steps will involve the VACI team presenting the proofs-of-concept to the Under Secretary and leaders from the Veterans Benefits Association.

**To Learn More**

* Scan the #Hacktheforms [resource guide](https://github.com/department-of-veterans-affairs/hacktheforms)
* Review VACI’s other efforts in [human-centered design](http://www.innovation.va.gov/hcd.asp.)
* Read the VACI “[Designing for Veterans: A Toolkit for Human-Centered Design](https://www.vets.gov/playbook/downloads/vaci-project-toolkit.pdf)” – a resource guide for applying HCD within an agency, and more on its interagency collaboration.

**Case Study 4: USAID**

*This case was compiled by Janine Hum at USAID.*

[Hum J., Market Access Advisor, USAID’s Center for Accelerating Innovation and Impact, 2016]

**Sparking desire for HIV prevention methods: Applying human-centered design to USAID’s global health goals**

# Background

HIV/AIDS is the leading cause of death for women of reproductive age in low resource settings. A 2016 UNAIDS report shows that the ages between 15 and 24 years are an incredibly dangerous time for young women. In 2015, around 7,500 young women became newly infected with HIV every week, the vast majority in southern Africa. Between 2010 and 2015, new infections among females aged 15–24 years declined by only 6%. Significant investments have been made to develop new and discreet female-controlled microbicides like vaginal rings or gels that can help women protect themselves from HIV. However, while clinical trials are demonstrating the efficacy of these products, there is also evidence of very inconsistent use, especially among younger women. Clinical trials have shown adherence rates below 30%, a problem that may have contributed to fluctuating efficacy rates. Without regular usage, these products cannot help lower HIV infection rates; worse, adherence rates are generally lowest among the most at-risk group of young women.

To design a better and more discreet HIV prevention product that is more likely to be used consistently and correctly, target group’s values, needs and lifestyle needed to be accounted for in the design process. [USAID’s Center for Accelerating Innovation and Impact](https://www.usaid.gov/cii) (CII) and its implementing partners IDEO and CONRAD sought to better understand the daily lives of at-risk young women using a human-centered design approach. The end goal was to encourage these women to adopt and make a habit of using microbicides and to generate excitement or desire for the product.

# Applying HCD

Through an iterative co-creation process with end-users in South Africa, this project explored underlying motivators and barriers to product usage and turned insights into design prototypes that fit women’s values, needs and lifestyles. These prototypes were meant to spark desire and encourage usage and adherence in young women. The HCD methodology used consists of four phases: 1) research & inspiration, 2) synthesis & strategy, 3) design & iterate, and 4) refine & roadmap.

The design process began with a research and inspiration phase, interviewing over 100 women who represented a range of demographic characteristics and sexual behaviors. Interviewees also included important in influencers, such as male partners, health care providers, and traditional healers. Given the sensitive nature of discussing sex and the stigma around HIV, it was important to approach the interviews delicately. Interviewers were careful to build trust with interviewees, to provide a respectful environment for the conversations, and to protect confidentiality where needed.

During the synthesis and strategy phase, researchers reflected on interview experiences to identify end users’ key needs and motivators, barriers, and encouragers to use. Across the many insights that emerged from this iterative research and design process, some of the most important takeaways for designing outputs included the lack of knowledge about the female anatomy, importance of discretion for any product related to sex and HIV, positive role of novelty, and pervasive fear of loss (to HIV as well as other causes). Six design principles were created based on synthesis of these research insights: be discreet and provide cover; provide different ways in; get literal; make the habit your own; make it rumor-worthy; and spark confidence and build trust.

During the design & iterate phase, the project team used the six design principles to create different versions of messaging, packaging and form factors that would appeal to women along each step of the user journey. These prototypes were tested and iterated on through another set of end-user interviews in a second phase of in-country research. Researchers observed how women interacted with the prototypes to better understand immediate reactions and associations. Interview topics explored how a woman might use the product, where she would store it, whether or how she would tell her partner about it, and any questions she might have. Throughout this process, co-creation activities were used to tap into end-user experiences, ideas and suggestions.

The final phase, refine and roadmap, is currently still underway. In this phase, researchers are gathering more feedback on the mid-fidelity prototypes in order to iterate and bring the designs to a higher fidelity level. Cost projections and live prototyping an additional part of this phase.

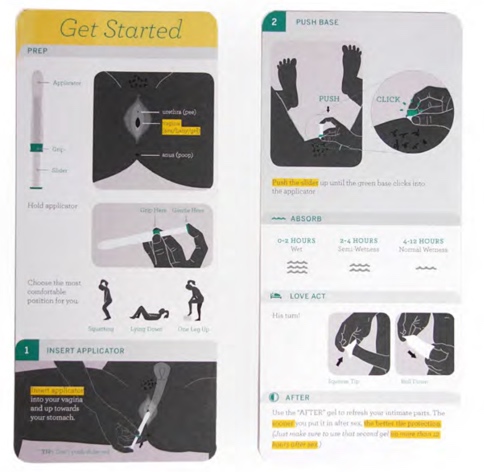
# Key Accomplishments

Using the aforementioned six design principles as a guide, the project created three distinct brand directions (complete with color palette, sample packaging and marketing copy) in order to test messages of intimacy, empowerment, and hygiene. To accompany these brands, the project developed clear visual instructional inserts as well as a video that walked users through the details of how a microbicide product could be used, including usage scenarios and “sex-positive” sex education tips. The project also engineered various applicator models to insert the product, attractive carrying cases with discreet compartments, and storage systems with refill reminders.

Together, these deliverables illustrated how design principles could inform the market launch of HIV prevention products. Since this was only an initial, exploratory project, the outcomes formed the basis of ongoing work that will further refine these outputs for microbicide products, expand the design ideas to additional delivery forms, and strengthen their cost-effectiveness and quantitatively test them for low- and middle income country settings. In addition, the project helped establish a broader interest among microbicide sector stakeholders to use design to develop HIV prevention products and experiences that reflect the needs and lives of young women at risk.



*Ex 1. 3 brand directions*



*Ex 3. Gel prototypes*



*Ex 2. Ring prototypes*

## Case Study 5: Veterans Experience Office

## Using Design to Help Veterans Navigate Post-Military Life and Services Offered through VA

*This case study was contributed by Sarah Hughes, Communications Designer at the Department of Veterans Affairs.*

[Hughes, S., personal communications with the Policy Design Lab, January 2017]

**Background**

The Veterans Experience Office (EO) works to understand how Veterans and their families perceive and interact with VA. The Office uses human-centered design in partnership with leaders and staff at Department of Veterans Affairs to make government work harder and smarter for Veterans. One of the EO’s key projects involved designing clear, concise ways to introduce Veterans to VA and to help Veterans gets started with applying for relevant services from VA. The Experience Office wanted to improve this particular area of communications between VA and Veterans because currently Veterans receive information about the VA in a fragmented way.

**Applying HCD**

To help Veterans answer the question “What can VA do for me?,” the EO explored new ways to direct Veterans to VA benefits and services. The process began by interviewing, co-designing, and testing the value proposition of potential tools. Over two weeks, the EO conducted a mix of in-depth [and intercept interviews](http://internetfreedom.secondmuse.com/framework-elements/intercept-interviews/) with Veterans in Denver and New York City. During interviews, Veterans were asked to share their story. The EO also invited them to participate in a card-sorting activity to test the value proposition of a low-fidelity prototype.

To then test and refine our initial concepts, the VA Experience Office followed an iterative testing and design process. During testing cycles in five key states we presented in-progress prototypes to a mix of Veterans who had recently separated from military life, long-time Veterans, and re-engaging Veterans. In between rounds of testing, the office integrated feedback into revised versions of the prototypes.

Among the materials tested were a welcome letter and other communication materials that give Veterans a broad overview of when and how VA might be useful at different stages of their lives. The Experience Office also included resources and contact information for each service to help Veterans get their questions answered online, over the phone, and in person. Finally, the EO field tested step-by-step checklists for Veterans that explain how Veterans access a particular benefit for service.

During field testing of materials, the EO heard feedback that Veterans want:

1. A manageable, yet broad view of what VA offers so that they could identify programs and services that might apply to them;
2. Clear information about how long it will take— and what documents are required— to apply for different services;
3. Simple, direct information in digestible amounts that will enable them to begin the process of applying for the relevant services.

**Key Accomplishments**

After extensive effort field testing communication materials with Veterans, the EO created a communication package that includes:

* A one-page letter that welcomes Veterans into VA and lets them know someone cares
* A lightweight booklet introducing Veterans to what VA has to offer, where and when VA can help throughout their lives, and the first few steps to get started with VA
* Several quick start guides in the form of front and back one-pagers providing simple, step-by-step information to help Veterans apply for or get started with specific services
* A one-page template allowing VE district field officers to create a comprehensive and personalized list of local people and places to help along the way.

**To Learn More**

* Review [tips on how to interview citizens about government service](https://www.digitalgov.gov/2015/05/29/getting-to-know-your-users-tips-and-tricks-from-veterans-affairs/) in a way that spurs new insights into that service
* Browse the veterans [Journey Map](https://innovation.ed.gov/files/2016/08/journeysofveteransmap.pdf) created to shed light on key moments and phases of Veterans’ lives
* Listen to [key highlights](https://www.youtube.com/watch?v=M6lRF_Z3VeY) from the ongoing work to use Veterans’ insights to improve and redesign customer service

# Deliverable 5. Challenges to deployment / approach limitations

Human-centered design is a flexible tool for problem definition and problem solving that can be implemented successfully in a variety of contexts, provided certain conditions are met.

**Key ingredients for successful HCD projects include:**

* Support from leadership
* Comfort with risk and ambiguity
* Physical space and dedicated personnel
* Training, mentoring, networking
* Building capacity to support HCD
* Marketing HCD within your agency

[Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]

## Support from Leadership

Human-centered design processes require the support of high-level leadership or management in order to succeed. Because HCD engages traditionally untapped stakeholders and structures work in an unconventional way, project teams sometimes rely on the authority of their management and their mandate to indicate buy-in and support of this process and to persuade others to participate.

During an OPM Innovation Lab “Foundations of Human Centered Design” training course in November 2016, several government employees and contractors came together to discuss ways to implement HCD within their organizations or providing guidance to other agencies on how to “sell the idea of HCD to their leadership.” In other words, how might we improve the way that we engage senior leadership to demonstrate the efficacy of this approach and increase the likelihood that those leaders approve the implementation of human-centered design methodology within their domain? The group developed the following tips for engaging leadership:

[Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]

* **Speak their language:** Senior leadership does not always have the details that you have, and they often make decisions based on high-level information. Talk to them in terms they use: budget, return on investment, efficiency, and employee satisfaction. It is also vital that you show your leadership how HCD aligns with your agency’s core mission or vision. [Miller, A., and Marcuse, J., personal communications with Office of Science and Technology Policy, December 2016]
* **Develop policy:** Policy, both internal and external, is the language of many government organizations. It is important to consider writing HCD or other similar mechanisms into that language. Policy implementation follows clear guidance, and in some cases can be a powerful tool.
* **Demonstrate value:** When engaging leadership, it’s important to show what benefits their agencies could obtain from implementing HCD. Consider using case studies or examples of successes. If possible, use a case study from your own agency, to demonstrate that this methodology has proven value to leadership. Walk them through the experience and the positive result, and use performance measurements that are important to your leadership. [Hamilton, V., personal communication with Office of Science and Technology Policy, December 2016]
* **A new approach for a new problem**: Too often, leadership returns to the same methodologies to solve an ever changing problem. Clearly identify the problem and how it is changing, and then highlight how using HCD could address it. Be sure to address aspects of the problem that may not be addressed by your leadership’s “go-to” methodologies. [Miller, A., personal communication with Office of Science and Technology Policy, December 2016]
* **Avoiding surprises**: No one likes surprises (especially leadership!). HCD helps your agency avoid surprises by considering the needs of the end-user before major investments are made. Walk your leadership through the concepts of framing a problem and customer discovery, and how a solution could be iterated upon prior to substantial expenditures. [Marcuse, J., personal communication with Office of Science and Technology Policy, December 2016]
* **Empower your Employees**: Many employees joined the Federal government to focus on public need and to serve communities. HCD puts the focus back on the public and can empower employees to effect change in simple but meaningful ways which support the overall mission. Highlighting this concept will help create a culture of innovation. [Brooks, S., Ippolito, A., and Schleuning, A., personal communications with Office of Science and Technology Policy, December 2016]

## Comfort with risk and ambiguity

A good HCD process doesn’t assume or preempt possible solutions, but begins from a place of ambiguity and uncertainty about the final form of potential solutions. This is hard. It requires a mindset of experimentation and comfort with risk taking on behalf of high-level leadership, along with a commitment to seeing the process through and to the solutions that emerge. However, it’s important to remind colleagues and leadership that taking the risk to design and test an idea through an HCD approach is much less costly and time-consuming than taking the risk to spend down budgets on untested ideas that may or may not work.

## 

## Physical space and dedicated personnel [cross-link to innovation labs]

[Miller, A., personal communications with Office of Science and Technology Policy, December 2016]

A human-centered design project is best served by a dedicated physical workspace for a project team. Because HCD is deeply collaborative and focused on stakeholder engagement and interaction, teams need a place to meet and conduct project-related activities. Furthermore, HCD processes generate many visual artifacts (often paper-based) that become reference documents throughout the process. A physical space becomes a home base for the project with easy access to materials and ongoing work.

A traditional conference room with a table and chairs is a start, but the furniture and layout of such a space are not conducive to the kinds of interaction and collaboration that HCD requires. Spaces designed for design work and collaboration facilitate flexibility and productivity. Moveable, modular furniture such as rolling chairs or stackable stools, rolling tables that can be reconfigured, and seating options, like a couch, assist in creating a space that can adapt to support a variety of activities and interactions. Similarly, spaces with ample whiteboard real estate, blank wall space, and less precious finishes make room for hands-on productivity, creativity, and ideation. (For more, see Doorley S., and Whitthoft, S., “[Make Space: How to Set the Stage for Creative Collaboration](http://dschool.stanford.edu/makespace/)”, Wiley & Sons, 2012.)

A structured HCD process also requires at least one dedicated person responsible for planning and executing work. Ideally, this happens with a team of people. HCD-led projects often struggle for oxygen in an agency environment with competing priorities; they require dedicated, uninterrupted chunks of time for deep collaboration and creative thinking. Project teams should have the support they need to pursue HCD projects that support the mission of their agency. Agencies should also consider investing in personnel with HCD expertise to increase capacity.

## 

## Training

[Human-centered design community of practice, personal communications, Office of Science and Technology Policy, December 2016]

For agencies or individuals who are just getting up to speed on human-centered design processes and principles, or for those who would like to expand their expertise and practice, training is an important resource. Many of the training programs that exist in the broader industry cater to private sector or non-profit organizations and are just beginning to consider contexts specific to government. There is a budding network of training opportunities inside Federal government that developed and intended specifically for Federal employees, though we are very much at the start of this arc of curriculum development, content exploration, and pricing models.

Innovative cultures do not appear overnight. Even in cultures that promote freedom of experimentation, organizational members must be trained to run effective innovation experiments. Members must know how to propose and structure an innovation pilot so that they can effectively measure the true impact of the idea. Conducting innovation pilots requires some training in design- thinking and quantitative and qualitative methods to measure stakeholders’ responses to innovation.

Mentoring and networking are also vital in the training effort. Employees feel reassured by learning from mentors who have traveled the innovation process path before. Employees also learn much from their peers as they all undertake the innovation process. Training, mentoring, and networking help to eliminate the notorious fear of failure.

Building capacity to scale human-centered design

[Miller, A., personal communications, with Office of Science and Technology Policy, December 2016; Brooks, S., Ippolito, A., and Schleuning, A., personal communications with Office of Science and Technology Policy, December 2016]

One major struggle that Federal HCD users face is how to take HCD to scale within their agency. While HCD may have worked well for a single project, HCD enthusiasts are often motivated to expand the availability of the methodology. There are several options available to help HCD users in this situation:

* **Training the trainer:** If you are struggling to scale-up a project which has succeeded in one office, or one area of the agency, you could follow the VA’s “train the trainer” model, and spread HCD practices one office at a time.
* **Visualize HCD:** Try visualization exercises to help colleagues “see” HCD in action. For instance:
  + Print method cards ([like 18F's](https://methods.18f.gov/)) on poster size paper and display around the office.
  + Display the HCD process and work throughout your office.
* **Start small:** Many HCD enthusiasts have had success at spreading the methodology by gradually introducing elements of HCD into their daily work and conversation, rather than implementing the entire strategy at once. Take something routine and re-imagine it. For example, at the start of a standard meeting, spend the first 5-10 minutes with an unexpected activity or game.
* **Learn together:** Take a group HCD online course with a small group of colleagues. IDEO and Acumen created a [free one](http://plusacumen.org/courses/hcd-for-social-innovation/). Groups that LEARN together, DO together, and then SHARE what they learned with other colleagues. Groups are more influential at introducing and spreading new ideas and approaches than if working alone.
* **Host an “HCD Day” (or half-day):** The State Department organized [UX Exponential](https://www.digitalgov.gov/2016/04/07/ux-exponential-state-department-turning-bad-user-experiences-into-good/) on April 8, 2016, to introduce UX, HCD, design thinking, storytelling, agile, and other concepts to colleagues with little or no knowledge of these terms. By making the unfamiliar familiar and hosting an event unlike any other State Department experience, participants kept an open mind to understanding how simple approaches and changes to how we work with each other can have significant positive impacts. Speakers and presenters comprised colleagues from across the government, State Department cross-office teams, and private sector practitioners.
* **Contracting:** Consider working with human capital or your procurements team to hire or contract in-house or rotating HCD experts.
* **Run a challenge**: If your focus is less on recreating your existing successes, and more on spreading the implementation of HCD more generally, you might attempt an HCD challenge. Challenges allow government employees, and often outside entities as well, to pitch their ideas for improvement. Winners receive the opportunity to work with your agency’s HCD experts to design and implement a new program, or could be awarded grants to fund their own HCD programs. For example, OPM offers tiered grants to employees, which award designers for continued progress and success in their proposed programs.

**6. How-To: Steps for deploying, practices for adapting**

|  |
| --- |
| **Human-centered Design 101 – a glossary of key terms** [textbox]  Designers are known for their creativity and new ways of solving problems based on the customer or end-user. Across the landscape, several terms are often used interchangeably to explain and express the design process:  **“Design Thinking”; “Human-centered Design”; “User Centered Design”; “Design Cycle”:** Both the method and mindset of applying the design process to solve a problem.  **“User”; “Customer”; “Human”; “Beneficiary**”: The person for whom the designer is developing a product or service for using the design process. The commonly used label changes depending on the application and sector (i.e. private, public, or nonprofit), but in each case refers to the end-user.  **“Empathy”; “Immersion”:** Working to understand the experience of the user for whom you are designing through observation, interaction, and by immersing yourself in their experiences.  “**Problem Definition”; “Problem Diagnosis”:** referring to the second stage in the design process where the designer synthesizes information collected during the empathy stage to arrive at a common definition of the problem they are trying to solve for the user.  **“Ideation”; “Brainstorming”; “Iteration”:** the third step in the design process is focused on rapidly developing ideas on how to solve the problem. The focus is typically on rapidly generating as many ideas as possible based on the understanding of the problem. Ideas are often combined and iterated upon to build a prototype. Iteration is a continuous part of the design process, as designers feed new information into their designs to refine and make them better.  **“Prototype”:** the product or service that emerges from the ideation phase. Designers often develop multiple prototypes to test on the user.  **“Pilot”; “Test”:** the designer introduces the prototype to the user and collects feedback on how they interact with it. The design cycle is restarted at this stage, as designers try to gain a deeper understanding of how the user identifies with the solution to further refine and iterate on the prototype, eventually settling on a final solution.  [Schoop J., personal communication with Policy Design Lab, Taylor Center for Social Innovation and Design Thinking, Tulane University, December 2016] |

**Four Steps for deploying HCD**: [IDEO, “[Human-centered design toolkit](https://www.ideo.com/us/post/design-kit)”, 2009]

There are four reinforcing steps for deploying HCD in your agency:

1. Identify the problem
2. Ideate and implement
3. Make the case to leadership
4. Create a minimal viable product (MVP)

## 

## Identify the problem

To begin using HCD, identify the problem. You probably have a good idea of your objective up front, e.g. “I want to revamp the school lunch program,” or “I want to improve the customer experience for veterans completing intake forms.” However, do not assume that you understand the source of the problem before you get started.

Use a variety of HCD activities designed to learn from the people closest to the work in order to gain an understanding of what problem needs to be solved. The result of this exploration will likely challenge commonly held assumptions about the situation and will give you a realistic view of the experiences of those most impacted by the service or product you are providing. HCD “how to” guides, including HCD activities are available through vendors like IDEO and the LUMA Institute.

For instance, interviewing your customer will clarify their needs and allow you to better tailor your design process to suit their needs. This can be done in a variety of ways, including asking open-ended questions such as “what are the short-fallings of the school lunch program,” and “which steps could we take to improve this program in your mind.” You could also ask your customers to rank their priorities: “Which is most important: cheaper meals or better balanced meals?”

You should also conduct “expert” interviews to learn about developments in the field, successes and failures of related design processes, and other useful knowledge.

## [IDEO, “[Human-centered design toolkit](https://www.ideo.com/us/post/design-kit/)”, 2009; Miller, A., personal communications with Office of Science and Technology Policy, December 2016]

## Ideation and implementation

The next step in your process is to begin ideating. Ideation entails brainstorming, co-creating (if you choose to co-create with other offices, private-sector partners, the beneficiaries of your work, or challenge entrants), the organizing and paring down of brainstormed ideas to those most appropriate to your challenge.

This step also includes rapid prototyping, which will eventually lead you to develop a simplified, low-cost version of your service or product to share with your customers for feedback (known as a minimum viable product, or “MVP”), and you will use their insight in order to quickly alter and improve your prototype,

Ideation is a good time to begin measuring success. While it can be difficult to set goals during a rapid iteration process, setting basic benchmarks allows you to determine when an idea or prototype should be scrapped in favor of another option or explored in more depth. In order to accommodate the HCD process, you could make “living” goals, which are adaptable to shifting design ideas and are capable of pivoting to mirror the design process.

After a particular solution has been prototyped and iterated multiple times, it might be ready to pilot. A pilot allows you to test your solution in a real-life situation for a limited time and with a limited portion of the target population to determine how the solution performs under real-world pressures.

## [IDEO, “[Human-centered design toolkit](https://www.ideo.com/us/post/design-kit)”, 2009; Marcuse, J., personal communication with Office of Science and Technology Policy, December 2016]

## Making the case to leadership

To implement an expansive HCD process, you will need the approval of your leadership. While this task may seem daunting, there are several steps you can take to gain and sustain support. In making the initial case for buy-in, you should consider your agency’s culture and willingness to adapt to methodologies like HCD. Your strategy should identify areas of concern your leadership may have and include responses which address these issues and that champion HCD. Below are strategies employed by existing, successful Federal HCD users:

* Partnerships: One particular approach which will ease the stress of pitching HCD to your leadership is to develop a coalition. If the issue you intend to resolve is pervasive, you might find colleagues who are also interested in implementing and pitching HCD. A coalition of partners interested in utilizing HCD will demonstrate broad interest and add intelligence and perspectives, key elements when pitching to leadership. [Hamilton, V., personal communications with Office of Science and Technology Policy, December 2016]
* Cost Savings: If your agency is more conservative or skeptical in its approach to new methodologies, you may want to appeal to a motivating factor, such as budgetary concerns. While HCD may require an up-front investment, whether for training or for the assistance of an innovation lab, the long-term savings of an improved program often outweighs the initial costs. [Marcuse, J., personal communications with Office of Science and Technology Policy, December 2016]

While at first glance, it seems less “risky” for agencies to follow the status quo and avoid new methodologies that could draw criticism, the Harvard Business Review has found [that design thinking actually poses fewer risks](https://hbr.org/2008/06/design-thinking) than business as usual. Taking the time to map out the projected costs of an HCD process versus the cost of continuing without a well-designed streamlined solution can help make the case for this investment. [Hamilton, V., personal communications with Office of Science and Technology Policy, December 2016; Marcuse, J., personal communications with Office of Science and Technology Policy, December 2016]

For instance, HCD facilitates the inclusion of all team members, resulting in more ideas and stronger teamwork, and rapid prototyping and iterating narrows the scope of the project to the most effective solutions without requiring large investments into ineffective solutions. Fewer ineffective investments, coupled with more effective ideas and investments leads to a less expensive, smoother process overall which in turn prevents criticism of poor financial decisions.

* Storytelling: You may choose to use storytelling to pitch HCD to your leadership. If another group has solved a similar issue, has leveraged HCD to solve other complex issues and has seen quantifiable results, it can help validate the use of HCD in your agency’s context. You can also invite those who have succeeded with HCD to present to your leadership. If there are HCD-enthusiasts within your agency, you should contact them to solicit advice and perhaps even collaborate in pitching HCD to your leadership. If not, you might also point to other agencies’ successes, or those of the private sector. While agencies may shy away from modeling public sector programs on private sector successes, you can remind your leadership that despite sectorial differences, the public sector can research, observe, and learn from the implementation and successes of HCD in the private sector. [Hamilton, V., personal communications with Office of Science and Technology Policy, December 2016]
* HCD Training: Many hurdles can be mitigated through education, and preferably, intensive HCD training. Agencies like OPM offer HCD training for those looking to adopt the methodology, and are currently designing training for on-the-go executives whose buy-in and understanding of HCD are critical to the success of HCD within their agencies.

OPM provides an intensive, 3-day course for Federal employees interested in pursuing HCD. This course examines “what is” and “how.” After launching their pilot course, OPM noticed that members of leadership would also benefit from proper training, yet may lack the availability to complete an intensive 3-day course. With that in mind, OPM is also developing a 1-day, executive-focused training course to provide leadership with a basic understanding of HCD. [Miller, A., personal communications with Office of Science and Technology Policy, December 2016]

* Results: Agencies may hesitate to implement HCD due to uncertainty of how to measure the success or failure of HCD methods, or balk mid-project at the shifting end-goals or success markers that are natural in the implementation of HCD. People, including leadership, have a natural desire to “benchmark” progress. If this occurs, you have two excellent options.

First, re-brief your leadership on the HCD process, focusing on the proven benefits of multiple failures and pivots. Second, you might take a cue from the VA and re-focus your leadership on the multiple types of value that the project will eventually demonstrate. For instance, the project might result in operational improvements, financial gain (or cost avoidance), societal value or morale improvement, or the improvement of the customer experience. [Brooks, S., Ippolito, A., and Schleuning, A., personal communications with Office of Science and Technology Policy, December 2016]

## Create a minimum viable product (MVP)

Once you have begun the process of ideation and iteration, you want to move toward creation of a minimum viable product (also known as an “MVP”). The MVP allows you to create a product and begin testing the product for its almost inevitable flaws. The MVP should be exactly as it sounds: a minimum viable product. You should not spend a great deal of time perfecting the initial product, for two reasons. First, it is harder to accept the failures of a product that you have spent weeks or months building. Second, because your end product is likely to have a failure or two anyhow, you may have wasted valuable time correcting perceived flaws that may be edited out of your next iteration regardless.

Once you have created a minimum viable product, you can present the product to stakeholders and receive feedback. That feedback will allow you to understand the successes and failures of your product, and head back to the drawing board to correct your failures. Keep in mind, this process may occur many times before your product is “perfected.” Think of the most successful products in the world: for instance, Apple launches a new (or a few new) iPhones each year. However, each year, there are flaws that are updated in the following weeks, and each year, improvements are made to their product. You may never have a perfect product, and that is to be expected as users and the contexts they operate in continuously change, but it’s important that you learn from your failures and keep improving product.

## [IDEO, “Human-centered design toolkit”, 2009; Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December 2016]

## Marketing human-centered design within your agency

To ensure the success of employing and scaling up a human-centered design approach, it is important to develop agency-wide support and interest. This requires effectively marketing human-centered design within your agency. One proven approach to create a marketing plan is called **RAISE:** Research, Adaptation, Implementation, Strategy, and Evaluation.

**Research:**

The key to effective marketing is understanding your audience. Conduct research and analysis, including surveys, focus group testing, interviews and intake meetings.

**Adaptation:**

Using the information gathered in the research phase, create tangible ideas and messages targeted at your audience. Budget pending, this may also include developing materials to disseminate, such as brochures, pamphlets, webpages or even short videos. Consider including personal success stories or case studies in these materials; this often helps the audience respond more favorably.

**Strategy:**

Develop an implementation strategy to disseminate the messaging you have created. Training programs and classes, e-blasts, webinars, factsheets, posters and social media are all effective methods for promoting your message.

**Evaluation:**

Evaluate how your marketing worked. Create a metric and process for measuring success, and then valuate the feedback and tailor your plan and messaging accordingly.

## Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December 2016]

**Deliverable 7. Online inventory of resources**

**Skillbuilding Resources and Courses:**

* [Virtual crash course](http://dschool.stanford.edu/dgift/) from the Stanford University Institute of Design
* [Course and Toolkit](http://plusacumen.org/courses/design-kit-facilitators-guide-to-introducing-human-centered-design/) for Facilitators of HCD from Acumen and IDEO Online
* [Course and Toolkit](http://plusacumen.org/courses/hcd-for-social-innovation/) introducing HCD from Acumen and IDEO Online
* [Design Thinkers Academy](http://www.designthinkersacademy.com/) offers HCD Bootcamps
* [Luma Institute Resources and Services](https://www.luma-institute.com/products-and-services) offers courses for both amateur and experienced practitioners of HCD
* [University of Maryland Academy for Innovation and Entrepreneurship](http://innovation.umd.edu/about/design-thinking/) offers HCD training courses
* [Design Thinking Blog](http://www.designthinkingblog.com/) is a web publication on trends and best practices from leaders in design thinking.

**Federal Resources for Human-Centered Design:**

* Kalil, T. “[Using Human-Centered Design to Make Government Work Better and Cost Less,”](https://www.whitehouse.gov/blog/2015/09/04/using-human-centered-design-make-government-work-better-and-cost-less) The White House Office of Science and Technology Policy, September 2015.  
  Case study examining how the USDA is using human-centered design to improve the National School Lunch Program as an example for other agencies.
* Brown, P., “[Human-Centered Design in the US Federal Government](https://www.innovations.harvard.edu/blog/human-centered-design-us-federal-government),” Harvard Kennedy School, March 2016.   
  Discusses the Office of Personnel Management’s Innovation Lab and seven key takeaways.
* Lane, K., “[How Human Centered Design Can Help Your Agency](https://www.govloop.com/how-human-centered-design-can-help-your-agency/),” GovLoop, September 2016.  
  Case study and lessons from human-centered design in use by the National Geo-spatial Agency
* [Designing for Veterans](https://www.vets.gov/playbook/downloads/vaci-project-toolkit.pdf) [i](https://www.vets.gov/playbook/downloads/vaci-project-toolkit.pdf)sa toolkit for human-centered design from Veteran Affairs Center for Innovation.
* IDEO’s [Human Centered Design Toolkit](https://yali.state.gov/wp-content/uploads/sites/4/2015/07/IDEO_HCD_ToolKit.pdf) was developed as a method for guiding innovation and design for people living under $2/day.
* [EngageHCD](http://www.engagehcd.com/) is a web resource developed by USAID’s Center for Accelerating Innovation and Impact (CII) and Dalberg’s Design Impact Group (DIG) to use HCD across the Bureau for global health work.
* “[LAB OPM  - Improving Government with Human-Centered Design](https://www.naswa.org/assets/utilities/serve.cfm?gid=99C966CA-3EAF-434E-AAAE-BE3B7F9C8C1A&save=1&dsp_meta=0).” Presentation on how to implement human-centered design in federal agencies.
* “Designing for National Security: An overview of the art and science of applying design thinking methods to national security,. Presentation by Joshua Marcuse, August 9th, 2016, National Security Council. [[See uploaded resource]]

**Watch and Listen**

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* ["An Introduction to Design Thinking,"](https://umd.app.box.com/s/4im7fuaig5fyw6xcqdxd3r9i290i3spi) University of Maryland Academy for Innovation and Entrepreneurship and Stanford University Institute for Design, 2015 .
* Bennet, K. and Liedka, J., "[Design Thinking: Creating a Better Understanding of Today to Get to a Better Tomorrow](http://www.forbes.com/sites/darden/2013/08/29/design-thinking-creating-a-better-understanding-of-today-to-get-to-a-better-tomorrow/#75518f625790)," Forbes Magazine, August 2013. Discusses how design-thinking focuses on the starting point and uses ethnographic tools to determine the path forward.
* Brown, T. "[Design Thinking](https://hbr.org/2008/06/design-thinking)", Harvard Business Review, June 2008. Brown, the CEO of innovation and design firm IDEO, illustrates several examples of design thinking at work.
* Beckman S. and Barry M., "[Innovation as a Learning Process: Embedding Design Thinking](http://cmr.ucpress.edu/content/50/1/25)," California Management Review Vol. 50, No. 1, 2007.  Outlines a model for human-centered innovation with a focus on team make-up and noting possible pitfalls in the innovation process.
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* Rauth I., Carlgren L. and Elmqu M., “[Making It Happen: Legitimizing Design Thinking in Large Organizations](http://onlinelibrary.wiley.com/doi/10.1111/dmj.12015/abstract)”, Design Management Journal, October 2014. How and why design thinking has gained ground in large organization and companies in recent years.
* Robinson, A. and Schroeder D., “[The Idea-Driven Organization: Unlocking the Power in Bottom-Up Ideas](http://idea-driven.com/about-idea-driven-organization)”, Berrett-Koehler Publishers, 2014. A book describing how to put together a management team open to grassroots innovation.
* Battarbee, K., Fulton Suri, J. and Gibbs Howard, S., “[Empathy on the Edge](http://5a5f89b8e10a225a44ac-ccbed124c38c4f7a3066210c073e7d55.r9.cf1.rackcdn.com/files/pdfs/news/Empathy_on_the_Edge.pdf): Scaling and Sustaining the HCD approach,” IDEO. Harvard Business Review case study of using “deep empathy” for more effective design.
* Voosen, P. “[To Win Funds, Scientists Pursue Sweeping Solutions to Social Ills,](http://www.chronicle.com/article/To-Win-Funds-Scientists/151717/)” Chronicle of Higher Education, February, 9, 2015. Illustrates trend toward funding mission-driving research.

# 8. Examples of policy that have enabled or encouraged approach (legislation, exec order)

Legislation

[S.3084 - American Innovation and Competitiveness Act](https://www.congress.gov/bill/114th-congress/senate-bill/3084), December 2016

Policy Guidance

Federal agencies must follow various laws and regulations, including the [Paperwork Reduction Act (PRA)](http://www.gpo.gov/fdsys/pkg/PLAW-104publ13/html/PLAW-104publ13.htm) and the [Privacy Act](http://www.justice.gov/opcl/1974privacyact-overview.htm), when collecting information from the public. All agency collections of customer feedback must adhere to the Privacy Act and all other legal and regulatory requirements. In particular, personally identifiable information (PII) should only be collected to the extent necessary, and agencies must meet Privacy Act requirements to the extent they collect, retain and retrieve PII. [[“Paperwork Reduction Act Fast Track Process](https://www.digitalgov.gov/resources/paperwork-reduction-act-fast-track-process/)”, DigitalGov.]

HHS offers [guidance for compliance on the Paperwork Reduction Act.](https://www.hhs.gov/ocio/policy/collection/infocollectfaq.html)

[Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794 (d))](https://www.gpo.gov/fdsys/pkg/USCODE-2011-title29/html/USCODE-2011-title29-chap16-subchapV-sec794d.htm)

# GSA offers a robust overview of [Section 508 Law and Related Laws and Policies](https://www.section508.gov/content/learn/laws-and-policies).

“[Strategic Plan for Improving Management of Section 508 of the Rehabilitation Act](https://www.whitehouse.gov/sites/default/files/omb/procurement/memo/strategic-plan-508-compliance.pdf)” OMB, Jan 24, 2013.

The OMB Strategic Plan outlines additional agency responsibility to increase transparency, strengthen accountability, and improve collaboration for Section 508 implementation.

[Applicability of PRA to Direct Observations of Users Interacting with Digital Services Tools and Products](https://www.whitehouse.gov/sites/default/files/omb/inforeg/pra_flexibilities_memo_7_22_16_finalI.pdf), OMB, 2016.

“[Flexibilities under the Paperwork Reduction Act for Compliance with Information Collection Requirements](https://www.whitehouse.gov/sites/default/files/omb/inforeg/pra_flexibilities_memo_7_22_16_finalI.pdf)”, OMB. July 22, 2016.

“In some cases when agencies obtain information on user interactions with digital services tools or products, including prototypes of those tools or products, they may not be subject to the PRA. In particular, under its regulations OMB does not generally consider facts or opinions obtained through direct observation by an employee or agent of the sponsoring agency or through nonstandardized oral communications in connection with such direct observations to be information under the PRA. See 5 C.F.R. 1320.3(h)(3). Thus, when the sponsoring agency merely observes a user interacting with a digital services tool or product and at most engages in nonstandardized oral communications with the user, the facts or opinions the sponsoring agency obtains are not subject to the PRA. Any direct observation should respect the observed parties' privacy and require their voluntary consent. In practice, many agencies, such as statistical agencies developing large scale surveys, couple direct observation with recruitment, screening, debriefing, and other data collection activities; for example, those necessary to remunerate participants. Many of these types of activities are covered by the PRA, but can still be facilitated through the generic clearance process. “

“[Social Media, Web-Based Interactive Technologies, and the Paperwork Reduction Act”](https://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/SocialMediaGuidance_04072010.pdf), OMB, April 7, 2010.

Relevant guidance for how to achieve compliance during collaborative stakeholder/customer engagement and discovery.

“[A Strategy for American Innovation](https://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf),” National Economic Council and Office of Science and Technology Policy, October 2015.

Outline of strategic moves for furthering innovation in the United States.

“[Open Innovators’ Toolkit](https://www.whitehouse.gov/sites/default/files/microsites/ostp/openinnovatortoolkit_nstcmemo.pdf)”, NTSC, 2012.

“[Executive Order – Presidential Innovation Fellows Program](https://www.whitehouse.gov/the-press-office/2015/08/17/executive-order-presidential-innovation-fellows-program)”, Executive Order, August 17th, 2015.

Order to establish the Presidential Innovation Fellows (PIF), a key diffusion mechanism for human-centered design.

## 9. Future directions (“next practices as opposed to best practices”)

Application of the human-centered design method and mindset is applicable to any setting across the Federal government. It has been tried and tested within specific agencies and diffused through Innovation Labs, Design Sprints, Innovation Councils, and workshops. The adoption of HCD, however, remains on the edges of government, limited to thinking about how to improve internal processes to better serve the public.

There is potential for further application to more ways of doing and thinking by:

* Improving product and service delivery through HCD for citizen-facing and internal government outcomes;
* Offering a framework for direct engagement with the public on how to better solve their problems – more efficiently and effectively by taking a human-centered approach;
* Encouraging active empathy and alternative framings when crafting legislation and policies to better align with the goals of the impacted population;
* Offering HCD training for senior leadership; thought exercises to understand what it is like to serve under them within an agency could help strengthen the organizational and increase productivity.

The merging of the mindset with other action-oriented tools within the Innovation Toolkit also remains an untapped arena for practice. HCD has percolated through Innovation Labs and has the opportunity to combine with other innovative approaches. For instance, agencies could combine the HCD approach to problem-solving with open-source platforms for crowdsourcing ideas.

The “how might we” question can be applied to any possible problem that Federal employees and policymakers are trying to solve, offering a process and perspective for ways of understanding to identify, pilot, and test solutions. This has unlimited application.

[Human-centered design community of practice, personal communications with Office of Science and Technology Policy, December, 2016]