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Considering both ambitious global family planning (FP) goals and the success of social and behavior change (SBC) programming in contributing to those goals, donors and implementers have been exploring new strategies to increase the impact of SBC approaches for FP programming. Human-centered design (HCD) is a creative approach to problem solving that can be leveraged to develop new SBC programs/interventions aimed at achieving FP goals. This brief highlights opportunities and recommendations for using HCD in FP programs based on the existing evidence. A companion brief examines another approach of interest: behavioral economics.

What is Human-Centered Design?¹

Human-centered design is a way of thinking that places both the people that programs serve and related stakeholders at the center of the design and implementation process. With emphasis on research, ideation, iteration, and prototyping, this process seeks to achieve novel solutions to complex problems. HCD can be used to inform FP SBC research, activities, and programs. While there are many different HCD processes, all of them, at their core, are rooted in empathy: a comprehensive understanding of the stakeholder(s) involved in the challenge at hand. HCD processes are scalable in duration and depth, from rapid sprints to multi-day collaborative workshops to long-term research.

What is Social and Behavior Change?²

Social behavior and social norms change refers to activities or interventions that seek to understand and facilitate change in behaviors and the social norms and environmental determinants that drive them. SBC interventions are grounded in a number of different disciplines, including social and behavior change communication, community mobilization, marketing, advocacy, behavioral economics, HCD, and social psychology.

¹ USAID. Human-Centered Design. (2018, August 6). https://www.usaid.gov/cii/human-centered-design

² High-Impact Practices in Family Planning (HIPs). (2018). Social and Behavior Change: A Critical Part of Effective Family Planning Programs. https://www.fphighimpactpractices.org/wp-content/uploads/2018/12/SBC_Overview.pdf

Methodology

Breakthrough ACTION compiled grey and peer-reviewed evidence on the impact of HCD within FP programming using the following key search terms:

- Impact
- Outcome
- Process
- Family Planning
- Contraception
- · Behavioral Science

- Reproductive Health
- Human-Centered Design
- · Design Thinking
- · User-Centered Design
- User-Experience Design

Literature was not limited by year or geographic region. Search engines included PubMed, Embase, Scopus, Global Health Science and Practice, and Google Scholar.

The search resulted in 355 citations, of which only six articles and reports presented information on FP-related outcomes resulting from FP interventions/programs that were developed using an HCD process. Based on the evidence available, this brief identifies opportunities and recommendations for using HCD to influence positive FP outcomes. More details on the identified literature are included in the Evidence Snapshots in Appendix I.

Additionally, examples of recent programmatic applications of HCD in FP were sourced directly from implementers, including Breakthrough ACTION. A brief survey was circulated to targeted relevant working groups to solicit implementation experiences. The results from this survey are included in Appendix II. The programmatic examples were not used to develop the evidence-based synthesis below.

When to Use Human-Centered Design in Family Planning Social and Behavior Change Programs



If the program has flexibility in potential solutions/outputs and is not committed to a predetermined solution or solution type

Utilizing an HCD approach in FP is not ideal when a solution or outcome is prescribed. Rather, HCD works best when the program is open to a multitude of solutions that can achieve a desired outcome, using techniques to come up with solutions that are both novel and empathy-focused. HCD creates opportunities to explore broader structural interventions such as products, processes, and business models, in addition to communication materials and campaigns.



If the program is not seeing expected results and does not know why

In instances where SBC interventions have been deployed, but had suboptimal impact, HCD can be leveraged to gain a more nuanced understanding of the problem at hand, with the goal of leading to innovative and novel solutions that better achieve the FP goal(s). The HCD process is designed to guide practitioners through an iterative design process that enables them to look at the problem from many different angles, by way of intentional stakeholder engagement, collaborative brainstorming, ideation, iterative prototyping, and testing.



If the program desires a deeper, empathy-driven solution

Empathy is at the core of HCD, as the process aims to render solutions that directly respond to the FP needs and desires of the target population as they see them. HCD emphasizes the importance of intentional and frequent direct stakeholder engagement as an opportunity to gain a clear understanding of the problem at hand, as well as the relational, power, and influence dynamics at play directly from the stakeholders themselves. It also allows practitioners to understand the environment and context in which the stakeholders operate, as well as understand their inhibitors and facilitators for certain behaviors and their feelings, needs, and goals. This results in a more empathy-focused understanding of the problem.

When to Use Human-Centered Design in Family Planning Social and Behavior Change Programs



If the program wants a solution vetted before implementation

HCD embraces an iterative approach to problem-solving as a means to generating successful solutions/ideas. HCD encourages practitioners to think expansively when coming up with solutions and employs frequent user-testing of low-fidelity prototypes before deeming a solution ready for implementation. Unlike pre-testing nearly finished solutions, this iterative approach of frequent testing with the target audience early in the design process facilitates early failures, which then informs rapid and low stakes iterations of solutions before finalization and ultimately implementation.



Things to Consider When Using Human-Centered Design for Family Planning



Limited Availability of Information on Impact of HCD in FP

The majority of available literature, both peer-reviewed and grey, focuses on the process of using HCD for specific FP research or programs but does not provide information on the impact of FP solutions that were developed through an HCD process. Having more evidence on the impact of programs/interventions developed from HCD processes would provide a better understanding of whether the use of HCD leads to better solutions, defined by impact on FP-related outcomes. This evidence is essential for strengthening the credibility of HCD in FP.



Balancing using a "Beginner's Mindset" with the Existing Evidence Base

While HCD is a newer approach for FP research and programming, research and programming in FP are not new, and there is an extensive FP evidence base that should not be ignored. HCD encourages practitioners to have a "beginner's mind" when starting the process, meaning going into the process with openness and eagerness and without assumptions and biases. This is a strength as it can invoke novel insights and creative solutions. However, practitioners need to balance this mindset with an understanding of the evidence base. This evidence can provide important information on the landscape of the challenge, contextual issues, the target population(s), and what has been done before. Notably, both traditional formative research and HCD have strengths and can be complementary, as together they can provide a more comprehensive understanding of both the challenge at hand and the key stakeholders involved.



Learning about All Stakeholders Related to the FP Challenge

The HCD process emphasizes the importance of designing solutions that directly respond to the needs of the target audience in a way that is desirable to them. While sometimes, practitioners narrow their focus to learn only about and from the primary stakeholder(s)/intended audience, this approach can lead to an incomplete understanding of the design challenge landscape, and related constraints and opportunities. This narrow focus can ultimately impact the outcome of the HCD work. To ensure a more comprehensive understanding of the FP problem landscape and future opportunities, and to increase the likelihood of producing a novel and impactful solution, we must learn about and from all the stakeholders involved in the challenge, including those related to, or who have influence on, the primary stakeholder(s).

Things to Consider When Using Human-Centered Design for Family Planning



Making Sure All Stakeholders Involved in the HCD Process Have a Shared Understanding of the Process, Timeline, and Design Challenge

Recognizing that HCD is still a relatively new approach for FP programming is important. Because of this, all stakeholders involved—donors, implementing partners, consultants, and evaluators—need to have a unified vision of the scope, objectives, metrics of success, and timeline of the HCD process, ensuring that any misconceptions about the process are clarified in advance. This unified vision, in addition to a consensus on the design challenge (including the target audience) and clearly defined roles and responsibilities, will help mitigate the risk of divergent expectations and facilitate a successful HCD process.



Designing and Implementing Appropriate Evaluation Methodologies for FP Programs/Initiatives that Use HCD

Given the nontraditional, iterative nature of HCD, we need to modify traditional evaluations to accurately assess the HCD process and its outcomes. To do this, evaluation teams must work together with the HCD practitioners to establish clear expectations and metrics of success, as well as design evaluations that align with the HCD-specific process and timeline. A phased evaluation approach allows for an assessment of the HCD process first, including prototype evaluation. Outcome and cost-effectiveness evaluations will follow once an intervention/solution has been designed and implemented.

Appendix I: Evidence Snapshots

"Batela Lobi Na Yo: Project"3,4

Democratic Republic of Congo

Batela Lobi Na Yo ("Protect your future"), a reproductive health program in Kinshasa, Democratic Republic of Congo, aims to provide information to youth on sexual health and the existence and efficacy of contraception. The program utilized an HCD process to gather insights from youth and their support systems on their feelings about contraception. The insights gathered from this process led to the development of different information-sharing platforms: high-profile events, church gatherings, and one-on-one peer conversations with ambassadors. The program devised creative ways to represent contraception methods in their materials: (1) "Power Poses," where local girls were photographed in poses that represent different contraception methods, and (2) "Squiggles," simple visual representations of different types of contraception.



The pilot of Batela Lobi Na Yo prompted 5,000 teenagers to visit a clinic, and 75% of them adopted a contraceptive method. The program has also reached 20,000 teens with one-on-one discussions about contraception.

³ IDEO. (n.d.) Batela Lobi Na Yo: Project. https://www.ideo.org/project/batela-lobi-nayo

⁴ The Compass for SBC. (2017). Batela Lobi Na Yo Project, DRC. https://www.thecompassforsbc.org/project-examples/batela-lobi-na-yo-project-drc

Appendix I: Evidence Snapshots

"Midterm Review of the Adolescents 360 Program"⁵

Ethiopia, Nigeria, Tanzania

Adolescents 360 is a four-year (2016–2020) program aiming to increase demand for and access to modern contraception for adolescent girls in Nigeria, Ethiopia, and Tanzania. The goal is to have 244,738 contraceptive adopters by the end of the program in 2020. While the project uses a multidisciplinary approach—public health, HCD, adolescent developmental neuroscience, sociocultural anthropology, youth engagement, and marketing—HCD was at the forefront of the design process. The emphasis on HCD helped facilitate co-creation with adolescents. The four programs designed to date are:

- 1. Smart Start (Ethiopia), which focuses on contraception discussions with newly married couples using financial planning as an entry point
- 2. **9ja Girls (Nigeria),** which creates safe spaces in health clinics for girls to explore the link between contraceptives and their aspirations
- **3. Matasa Matan Arewa (Northern Nigeria),** which uses discussions about maternal and child health as an entry point to provide contraceptive counseling
- **4. Kuwa Mjanja (Tanzania),** which provides entrepreneurial and life skills training with opt-out contraceptive counselling sessions both in clinics and at out-of-clinic pop-up events.

All of these programs facilitate access to contraception in a discrete way to help avoid community stigma.



By August 2018, the midterm review point, 120,443 adolescent girls had attended Adolescents 360 events and 65,971 of whom started using a modern contraceptive method. LARCs made up 51% of the methods adopted across all three countries. The cumulative conversion rates (defined as contraception adaptors divided by program attendance) were as follows: northern Nigeria: 70%, Tanzania: 61%, Ethiopia: 62%, and southern Nigeria: 42%. One of the key successes has been linking contraception with aspirations. While the HCD process was highly valuable, some of the notable challenges included the following: (1) excluding the existing evidence base, (2) needing to be broader in stakeholder focus and go beyond adolescent girls to include decision-makers, and (3) overshadowing the other disciplines the project used (public health, adolescent developmental neuroscience, socio-cultural anthropology, youth engagement, and marketing).

⁵ Newport, S., Appleford, G., Mulhern, E. (2019). Midterm Review of the Adolescents 360 Program. https://www.itad.com/reports/midterm-review-of-the-adolescents-360-program/

Appendix I: Evidence Snapshots

"Challenges and opportunities in evaluating programmes incorporating human-centered design: lessons learnt from the evaluation of Adolescents 360"6

Ethiopia, Nigeria, Tanzania

Adolescents 360 (A360) is a four-year project aimed at increasing modern contraception use among girls, aged 15–19, in Nigeria, Ethiopia, and Tanzania. The project used HCD, along with other approaches and methodologies, to come up with solutions to address the contraception needs of the target population. A360 sought to evaluate the project by way of a process evaluation, quasi-experimental outcome evaluation, and a cost-effectiveness study. This paper focuses on challenges and opportunities associated with the different evaluations.



A360 concluded that traditional evaluations need to be modified to fit HCD interventions/programs and a key challenge for evaluators was embracing the uncertainty of the HCD process while also preserving scientific rigor. Some of the key recommendations were to ensure that the evaluation team works closely with the implementers to mitigate methodologic gaps and to align timelines; to emphasize to the evaluators the need to be flexible, given the flexible and iterative nature of HCD; to consider a phased evaluation, initially focusing on a process evaluation during the HCD process, followed by outcome and cost-effectiveness evaluations; and to recommend that evaluators wait until implementers have finalized the target geographies, target population, and intended outcome before planning for the outcome evaluation.

⁶ Doyle, A. M., Mulhern, E., Rosen, J., et al. (2019). Challenges and opportunities in evaluating programmes incorporating human-centered design: lessons learnt from the evaluation of Adolescents 360. Gates Open Research, 3, 1472. https://doi.org/10.12688/gatesopenres.12998.2

Appendix I: Evidence Snapshots

"Development and testing of an iOS waiting room "app" for contraceptive counseling in a Title X family planning clinic"

United States of America

Researchers used HCD to create an application for long-acting reversible contraceptive (LARC) information for patients to use in clinic waiting rooms in Chicago, Illinois. Initially, low fidelity prototypes were developed using PowerPoint to test content with target users. Once tester feedback reached saturation and iteration was complete, the study team built a fully functional app prototype to be tested in a randomized control trial (RCT). By using HCD, the study team was able to learn first-hand from target users the things they found most critical for the app, with regard to content and presentation. The iterative approach allowed for rapid design modifications in response to user feedback before finalization.



The results of the RCT showed that use of the app improved knowledge of contraceptive effectiveness. There was no significant difference in the selection of a LARC between the two study arms and most participants who selected a LARC selected an IUD. More than 90% of users liked the app and thought it was easy to use, informative, and a good use of time.

⁷ Gilliam, M. L., Martins, S. L., Bartlett, E., et al. (2014). Development and testing of an iOS waiting room "app" for contraceptive counseling in a Title X family planning clinic. American Journal of Obstetrics and Gynecology, 211(5). https://doi.org/10.1016/j.ajog.2014.05.034

Appendix I: Evidence Snapshots

"Diva Centres: Project"8,9

Zambia

The project employed the three phases of the IDEO Design Thinking process to understand the lives of adolescent girls in Zambia and to test potential solutions for education on sex and contraception. As a result of this process, **Diva Centres were developed as safe spaces**, without a medical vibe, **for young women to learn about sexual and reproductive health and contraception**, and to **obtain free contraception if desired**. Another important output of the process were personas—the Divine Divas—which were **designed to be relatable to Zambian female teens**. Each Diva represents a different lifestyle and uses a contraceptive method that is best suited for her. This provides teens the opportunity to determine which Diva(s) may be most similar to them, thus giving them information on potential contraceptives that might best suit their personality and lifestyle.



Before Diva Centres, adolescents (15–19) made up fewer than 7% of all services offered by Marie Stopes Zambia (MSZ). From October 2014–October 2016, after the Diva Centres launched, adolescents averaged 12% of services accessed (about 500 services each month), thus showing that interventions designed using an HCD process could optimize desired impact. Additionally, during the same timeframe, MSZ saw an increase in both unmarried young people and those without children in outreach programs, which can be attributed to a better understanding of these populations as a result of the HCD process.

⁸ IDEO. (n.d.). Diva Centres: Project. https://www.ideo.org/project/diva-centres

⁹ Itad. (2017). Evaluation of the Hewlett Foundation's strategy to apply human-Centered design to improve family planning and reproductive health services in Sub-Saharan Africa. William and Flora Hewlett Foundation. https://hewlett.org/wp-content/uploads/2018/07/Itad-HCD-Evaluation_Final-Report_Nov-10-2017.pdf

Appendix I: Evidence Snapshots

"Future Fab: Project" 10,11

Kenya

The project employed the three phases of the IDEO Design Thinking process: inspiration, ideation, and implementation, to understand the lives of adolescent girls in Kenya and to test potential solutions to address barriers to contraceptives access and treatment of sexually transmitted infections. The main output of this process was the **development of "Future Fab,"** which is a **lifestyle brand for Kenyan teens** focused on **communication with health care providers about contraception.** Some of the key activities developed as part of the lifestyle brand were community dialogues, events, parent meetups, teen meetups, youth-friendly providers, magazines, and convenient and welcoming clinics.



Data from the project pilot showed an increase in the number of client visits by adolescents from 9.5% to 23% and visits by young mothers from 12% to 29%. From July 2016—March 2017, the total number of contraceptive methods provided per month increased from 225 to over 1,000, of which over 70% were LARCs.

 $^{^{10}}$ IDEO. (n.d.) Future Fab: Project. https://www.ideo.org/project/future-fab.

¹¹Itad. (2017.) Evaluation of the Hewlett Foundation's Strategy [...]. (see footnote 9).

Appendix II: Current Projects Using Human-Centered Design Elements

The examples below demonstrate additional insights from applying an HCD approach to FP programming. The programmatic examples reinforce many of the learnings described in the literature cited previously.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Zambia (DISCOVER), worldwide (APC)	DISCOVER-Health (2015–2021) and Advancing Partners and Communities (2012–2019)	John Snow, Inc.	Introduction of Sayana Press self injection contraceptive through private providers.	HCD was used by way of immersive sessions and an interactive workshop to gain insights on the health systems' relationships and experience with Sayana Press. Clients, providers, pharmacies, and regulatory authorities were all included in order to inform scaleup.	HCD helped create awareness and facilitate meaningful dialogue with policymakers and public-private partnership collaborators. Pairing a technical expert with a design expert helps maximize impact.
Philippines	USAID'S ReachHealth (2018–2023)	RTI International and Johns Hopkins Center for Communication Programs	Improving access to critical health services for Filipino families and assisting Philippine communities in reducing the unmet need for FP services and decreasing teenage pregnancy.	HCD was used to co-design solutions to reduce unintended pregnancies among adolescents. This was done through defining insights from a set of empathy activities (interviews, observations, and focus groups) that cut across multiple levels of the socioecological model, which were then used to ideate and co-design solutions with adolescents. The team also used various projection techniques to help encourage teens to share their experiences and perspectives. The project partnered with youth-serving institutions to conduct the fieldwork, develop insights, and conduct rapid testing.	By engaging directly with youth, the HCD process provided a fresh perspective on drivers of teenage pregnancy. In order to get strong community engagement, recruitment is key. The right mix of participants is essential for co-creation, and the activities need to be customized to meet the community's needs.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Burkina Faso, Pakistan, Tanzania	Beyond Bias (2016- present)	Pathfinder International	Reducing FP provider bias to improve access and perceived quality of contraceptive services for youth.	HCD was used with youth, providers, and key stakeholders to ideate and prototype solutions, which ultimately made up different elements of the Beyond Bias intervention package.	Because HCD is an interactive nonlinear process, standard project management, and work planning approaches should be modified to accommodate for the ambiguity and iterative design central to the HCD process.
Uganda	DMPA-SC Self- injection Best Practices (2017– 2019)	PATH	Designed, implemented, and evaluated contraceptive self injection programs, trained health workers to counsel women on the option of contraceptive self injection with DMPA-SC: putting the power into women's hands to take charge of their reproductive health.	HCD was used to identify user needs and inform best program practices. Journey maps were developed to highlight client and provider perspectives, with input from stakeholder interviews and interactive workshops. The maps served as program frameworks that were refined and evaluated (using quantitative and qualitative methodologies) during implementation.	Journey maps are a great tool for understanding and designing service delivery systems. Rapid piloting allows for validation of designs and facilitates modifications before launching long-term programs.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Nigeria	Nigerian Urban Reproductive Health Initiative (NURHI 2) Project (2015–2020)	Johns Hopkins Center for Communication Programs	Creating a positive shift in FP social norms at the structural, service, and community levels that drive an increase in the contraceptive prevalence rate in Kaduna, Lagos, and Oyo States.	The project gathered key stakeholders to use HCD to generate insights and design prototypes, which are now interventions, deployed to address FP service provider bias. HCD was also used to review the NURHI Distance Learning Education Application, a post-training tool for FP service providers.	HCD allowed the project to better understand the challenges and opportunities providers face in delivering quality FP services by way of empathy-focused observations. This process also helped ensure stakeholder buy-in for the solutions generated.
Kenya	Post Pregnancy Family Planning Choices in the Public and Private Sectors (2016– 2021)	Jhpiego	Scaling-up post pregnancy FP by generating actionable evidence that can be used to improve post-pregnancy FP programmatic activities.	HCD was used to understand barriers and facilitators to uptake of post-pregnancy FP for young women in Kenya, by way of journey map development, and to co-create solutions with them.	Journey maps brought to light critical influencers and events/points that are important to post-pregnancy FP decision making.
United States, Mexico, Dominican Republic, Guatemala, Liberia, Kenya, Tanzania, Uganda, Democratic Republic of the Congo, Ghana, Côte d'Ivoire, Mali, Cameroon	Family Planning mobile app as counseling tool for frontline health workers (2017– 2019)	Hesperian Health Guides	Developing and user testing a mobile app for use as a contraception counseling aid for community health workers, nurses, midwives, and other frontline health workers.	Iterative user testing with the target audiences was used to make modifications/ improvements to the app. Feedback was collected during an "open beta" phase.	Iterative user testing allowed for app tools to be tailored to the exact needs of the target users.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Zambia	Breakthrough ACTION Zambia (2017–2020)	Johns Hopkins Center for Communication Programs in partnership with Save the Children, ideas42, ThinkPlace, Human Network International/Vot	Using SBC to support increased adoption and maintenance of healthy priority behaviors including contraceptive use among 15–19 year olds.	Two HCD workshops were conducted with the government, implementing partners, and youth to develop, test, and tweak several interventions. The prototypes generated were tested in between the workshops and two interventions were ultimately implemented: Adolescent Wellness Days and the Ni Zii (Shhhh!) confidentiality training and pledge for health workers.	Youth engagement in the process was critical to truly understand what would or would not work and to continuously check assumptions.
Democratic Republic of the Congo (DRC)	Breakthrough ACTION DRC (2018–2022)	Johns Hopkins Center for Communication Programs in partnership with ThinkPlace	"Couples Party": An event especially designed for couples to encourage shared decision-making regarding health practices, and to increase knowledge of essential health practices while allowing them to enjoy time together.	The HCD process consisted of an intent workshop, capacity strengthening workshop, and insight harvesting to determine how essential family health practices and the systematic use of medical care among parents of children under five and pregnant women can be encouraged. As part of this process, several prototypes were developed for testing, including "Fête pour les couples" or "Couples Party."	Having multiple iterations and modifications of the prototype, which were informed by user feedback and observations by the project team, led to a better understanding of the needs, desires, and expectations of the target audience.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Nigeria	Breakthrough ACTION Nigeria (2018–2022)	Johns Hopkins Center for Communication Programs in partnership with Save the Children, ThinkPlace, Ideas42, and Viamo	Improving the practice of 17 priority individual health behaviors in malaria; maternal, newborn, child health, and nutrition (MNCH+N); FP and reproductive health (RH).	The HCD activities were not FP specific; rather, an integrated approach was used to generate insights into the human experience of MNCH+N and FP/RH in three states in Northern Nigeria. The HCD process included an intent workshop where the MNCH+N objectives were collaboratively defined. Then the project performed discovery ethnographic fieldwork consisting of in-depth interviews and observations with target audiences in their homes, workplaces, health facilities, social, and other settings. The findings illuminated a number of opportunities for SBC interventions from which four interventions were co-designed and tested and are currently being implemented. One of the interventions focused on creating safe spaces within the community for women to learn about MNCH+N and FP/RH while gaining financial literacy skills.	Engaging the right stakeholders from the beginning is essential for developing a shared understanding of project intent. Iterations, and fine-tuning through several rounds of testing and refinement, help develop interventions that lead to the desired change.

Country(ies)	Project Name and Dates	Implementing Partners	Project Description	Project Findings	Insights
Global	Breakthrough ACTION PRH Year 3: Empathways Youth Segmentation Tool (2019–2020)	Johns Hopkins Center for Communication Programs in partnership with ThinkPlace	Developing a cardbased tool that can be used globally to build empathy with youth around their FP decision making and influences.	The content and structure of the tool was developed in response to a broad literature review of FP related to youth audiences. The tool was developed through many iterations, with each new version being tested with target audiences (youth, program designers, and policy designers). The testing sessions examined the suitability of the content, usability of the tool, and usefulness of the outcomes. Feedback from each round of testing informed the next round of concept development.	"Perfect" is the enemy of "good": each iteration of the tool benefited from early testing and rapid feedback, even when the concept was not finalized or polished. The team realized that the first iteration was too developed for the first test and had to take several steps back to address unidentified issues. Testing ideas with the target audience, rather than representatives or outsiders, is essential. Ultimately the tool will need to be used by the target audience, so they need to be involved in the testing and development as much as possible.