









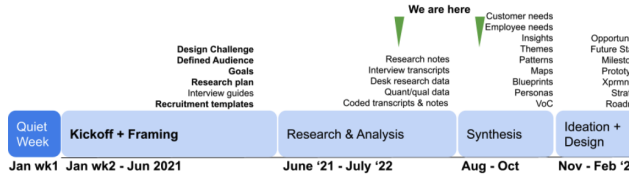


Research Kickoff Board of circular stakeholder mappings and Research question-method-stakeholder matrix

 App usability testing	10 Dec 2020
 Video interviews	15 Sep 2022
 Airline seat reviews	10 Dec 2020
 SBIR/STTR Service Discovery 2021	2 May 2023 
 SBIR/STTR Last Mile-Entrepreneur Discovery 2021	16 Jun 2021 
 SBIR/STTR SolDev Process Discovery 2021	16 Jun 2021 
 Innovation Films	8 Apr 2022

Examples of multiple projects in research repository



Please use our [SD folder](#) which houses the research, background info, meetings, and more, as well as our [team board](#) to track our progress. You can also check our [research repository](#), [Wiki](#), and [Miro workspace](#) for current insights. Let us know if you need permissions. You can see some of the [Patterns, Themes, and Insights we've found so far in this document](#).

Last week we:

- Planned out the next two weeks for the interns
- Updated [analysis](#) of [organizational core competencies survey](#) to include sensitivity inputs
- Started SB synthesis with Rutgers team

Example "Weekly Ship" 1-pager

Voice of the Customer

Introducing Characters to Better Understand Our Customers

Findings Report | June 2023

Voice of the Employee

Introducing Characters to Better Understand Our Employees

• Findings Report | June 2023

Service Insights

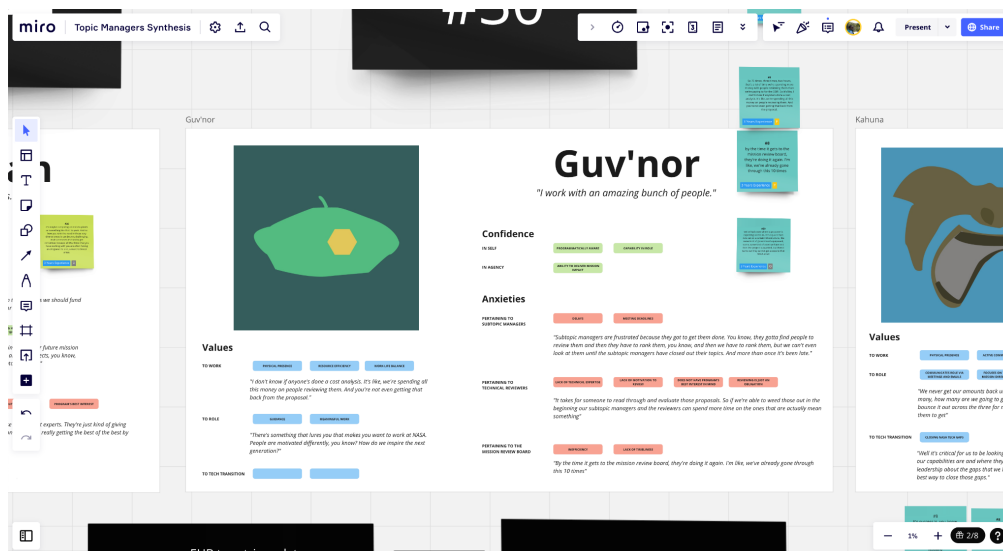
A Report on the Health of the X SBIR/STTR Service

Findings Report | June 2023

Cover of VoC publication

Cover of VoE publication

Cover of SI publication



Personas for the Topic Manager employee role



Belgian Malanois

A PM that prefers certainty and stability when it comes to investment.

Qualities: Uncertain, motivated, self-initiative, critical, maintains high expectations

Motivations

- Desire to stimulate market growth through technology commercialization
- Firms that have created expectations for themselves so that PMs are certain of what they are investing in

Anxieties

- Sourcing funds for projects
- Finding a project that they want to push for but does not have any funds to allocate towards the project
- Lack of certainty about the future of projects that they may want to push forward

Funding Progress Events

- While looking through proposals that have been submitted in their subtopics, they receive a proposal that matches what they are looking for.

Funding Progress Situation

- PM looks at a proposal of an SBIR/STTR funded technology that matches their goals/needs for the project, and is also something that fits in their current budget. Decision remains on the PM about whether or not they want to push through for funding with the project.

Example [character](#) (instead of persona) from the X Program Manager investor role

Introducing Characters to Better Understand Our Customers	
Findings Report November 2022	
PROJECT TEAM	
THANK YOU	
Executive Summary	
Research Synopsis	
Introduction	1
Methodology and Methods	1
Small Businesses	1
Characters & Personas	1
Journey Maps	1
Themes	1
Theme 1	1
Patterns	1
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Any Level of SB_CX

$$= 0.05*Hubzone_CX + 0.10*VOSB_CX + 0.05*SDVOSB_CX + 0.20*WOSB_CX + 0.05*BOSB_CX + 0.05*LOSB_CX + 0.05*IOSB_CX + 0.05*AAPIOSB_CX$$

Experience & Equity Metrics Equations

VOSB - Veteran-owned SB

SDVOSB - Service-disabled-veteran-owned SB

WOSB - Woman-owned SB

BOSB - Black-owned SB

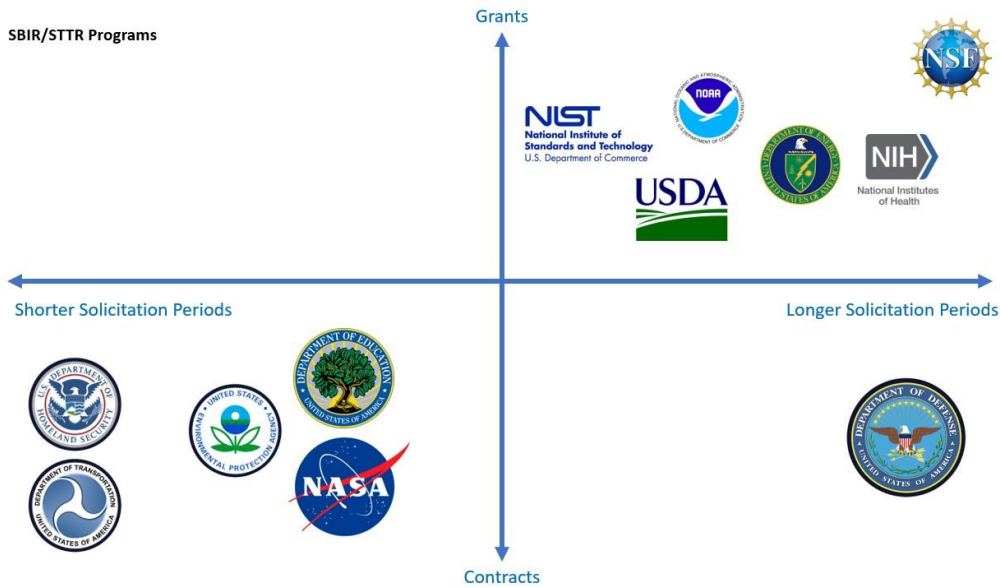
LOSB - Latinx-owned SB

IOSB - Indigenous-owne SB

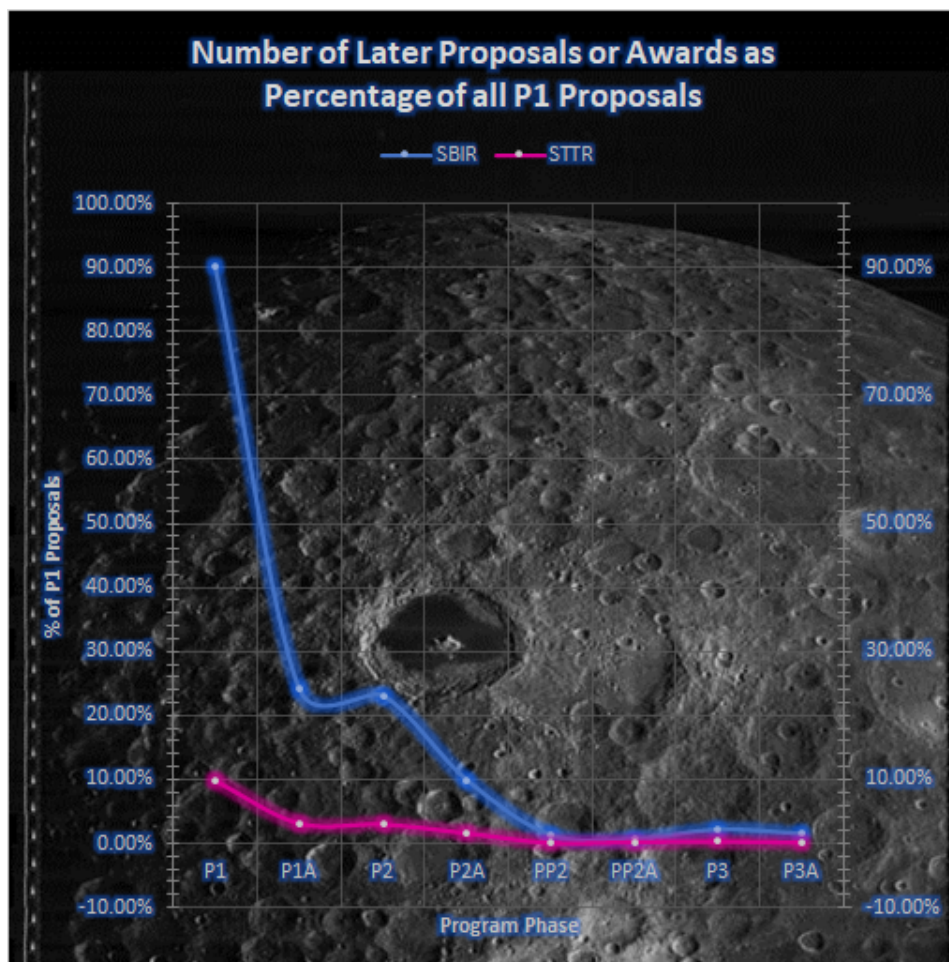
AAPIOSB - Asian American, Pacific Islander, Alaska Native, Native Hawaiian-owned SB

<p>Theme: Data and Metrics Issues L2 Workstream Team employees feel that data within the program should be more visible and readily accessible, and that the program might need better metrics on specific performance areas like DEIA. Four members</p> <p>L2 Workstream Team Insights: EJ</p> <p>1 May 2023</p>	<p>Theme: Communication and Feedback Problems One L2 mentioned that although they were interested in the position, they also found the slow hiring process and lack of communication and feedback from the hiring staff frustrating. 3 L2s collectively</p> <p>L2 Workstream Team Insights: SD</p> <p>1 May 2023</p>	<p>Untitled insight</p> <p>Draft</p>	<p>REI OD + Strategy focuses mainly on organization design, management changes, team building, and organizational functioning work overall. REI OD + Strategy has a process that looks at how well existing processes are working in the program and</p> <p>REI OD + Strategy Insights</p> <p>27 Mar 2023</p>	<p>SSOs rely on their PMO team and think highly of them. SSOs feel that the workplace could benefit from better defined roles and task delegations. SSOs want to make sure that their contributions and efforts are making an impact and that they have clear</p> <p>SSO Insights</p> <p>6 Mar 2023</p>	<p>Preparedness for unexpected difficult outcomes: important to consider future outcomes that could affect the program, and how to ensure that program will be able to adapt and overcome any. Most firms involved with the program are returning firms, already</p> <p>L1 Insights: RQs</p> <p>17 Feb 2023</p>
<p>L1 Employees were knowledgeable about the program before their role. L1 Employees tend to already be knowledgeable about the program before having taken on their role. They expressed different ways that they were aware of or involved in the program</p> <p>L1 Insights: EJ</p> <p>17 Feb 2023</p>	<p>Clearer goals for the program: Desire for the program and its vehicles to be clear and easy to use for the customers, and for the vehicles to be as effective as possible. Diversity, equity, and inclusion: Make sure we are continuing to help underrepresented</p> <p>L1 Insights: EX</p> <p>17 Feb 2023</p>	<p>Tech infusion: L1 Employees feel very strongly about gearing the program towards technology infusion both to the benefit of NASA and NASA's technology needs, as well as for the benefit of the small businesses and research institutions participating in the</p> <p>L1 Insights: SD</p> <p>17 Feb 2023</p>	<p>Well-being and self-care are important among the team. L1s take well-being and self-care seriously and are very positive about the team. They recognize that the program is fast-paced and challenging, and that special circumstances like those caused</p> <p>L1 Insights: EX Dim</p> <p>17 Feb 2023</p>	<p>PM CJ Insights: Applying</p> <p>Draft</p>	<p>Component vs Complete Product</p> <p>Draft</p>
<p>Communication</p> <p>Draft</p>	<p>Cloud Software</p> <p>Draft</p>	<p>Review Process</p> <p>Draft</p>	<p>The RIs became aware of the program through other SBIR/STTR and funding programs, their business collaborators, personal connections, and NASA itself. The most common method of awareness were through personal connections, such as from</p> <p>RI CJ Insights: Awareness</p> <p>Draft</p>	<p>The RIs were interested in pursuing funding, having business partners or collaborators, and growth and development in institution/organization and its technology/product. The most common interests are pursuing funds and to partner</p> <p>RI CJ Insights: Interest</p> <p>Draft</p>	<p>The applying to STRR journey of RIs included deciding to apply, doing the application process, and applying for the program through their partnership or collaboration. The most common experience is doing the process of applying by submitting a</p> <p>RI CJ Insights: Applying</p> <p>Draft</p>
<p>PMs express the desire to invest in a wide variety of technologies, but those technologies do not always align with agency goals and as a result, do not receive the funding needed in order to develop. The goal of commercialization inhibits PMs from</p> <p>PM CX/RQ Insight</p> <p>Draft</p>	<p>PMs have mentioned receiving proposals that are innovative, but are however, not what their particular project is looking for, leading to rejecting proposals that do have potential. PMs recall how some projects have had overwhelming success, encountering</p> <p>PM CX/RQ Insight 2</p> <p>Draft</p>	<p>PMs of all experience levels wish to ultimately contribute to the broader goals of NASA and stimulate the commercial market to create high-performance technology that fulfills technology gaps. Additionally, PMs have the goal of prioritizing and incentivizing</p> <p>PM CX Insights: Customer Goal</p> <p>Draft</p>	<p>PMs of all experience levels have a focus of advancing technology in their respective topic and aim to commercialize their technology.</p> <p>PM CX Insights: Customer Motivation</p> <p>Draft</p>	<p>PMs of high infusion experience expressed a need to gather the correct tools and knowledge to further their technologies. In addition, they expressed that they would like to have more transparent communication between PMs, companies, and the various</p> <p>PM CX Insights: Customer Needs</p> <p>Draft</p>	<p>PMs of all experience levels believe the timeline of the SBIR/STTR program is too slow causing technologies to become obsolete by the time the technologies have been developed. Furthermore, they note a lack of agency support as they have a hard</p> <p>PM CX Insights: Customer Pain Point</p> <p>Draft</p>
<p>PMs have many technical tasks associated</p>	<p>PMs use the Decadal Survey, the NASA</p>	<p>PMs of all experience levels have positive</p>	<p>Most PM's of all experience levels became</p>	<p>PMs with experience infusing 3+</p>	

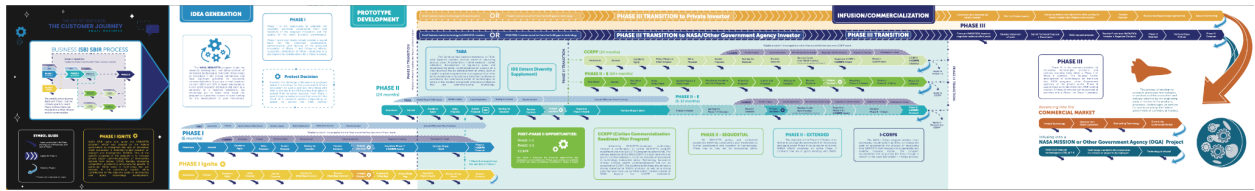
Insights from Research Repository



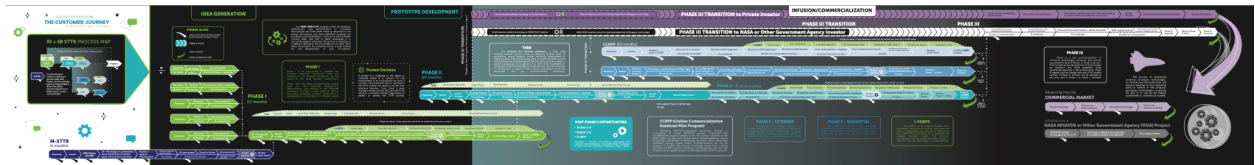
One of many white space analyses of various SBIR/STTR programs



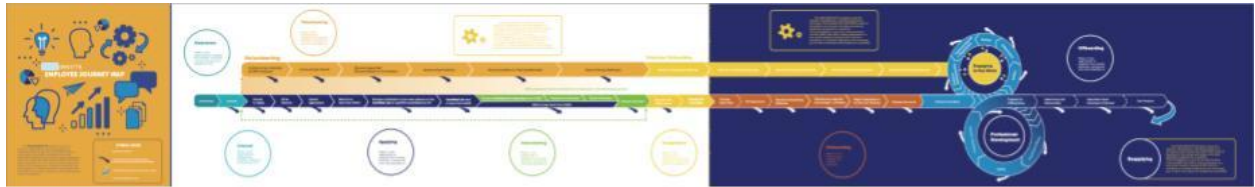
Pipeline analysis of proposals moving through our phased funding



SB Journey Map



RI Journey Map



Employee Journey Map

Phase 1 Service	Awareness	Interest	Decide to Apply	Write Proposal	Submit
Evidence or Props	Search engine, Website	Website, Show of support	Website, Show of support	Word Processing software, Hosting Service	
Activities and Tasks (Customers)	Visit SBIR website, Word of mouth, Social Media, etc.	Private website, etc.	Looking and the word, Decide	Develop Preliminary Strategy, Define Objectives, etc.	
Front-Stage Employee Actions		None	None	Equipment purchase, Grants/contracts needed for selection, Call for proposals	
Technology	Website, API	Website	None	Website for Subcontractor Needs, Subcontractor PDF	
Data			None	Web Hosting, Web Content, Web Hosting	
Back-Stage Employee Actions					
Infrastructure					
Capabilities & Support Processes					
Policy					

Part of service blueprint for Phase 1 of SBIR service



Zoom-in of simplified SB Journey Map (the left part of the full SB journey map above)



Example SB Experience Map

Moon Shot – Existential Threat



Today is August 8, 2030 - The Chinese **Chang'e 10** landed on the south pole of the moon with two CNSA astronaut and one ROSCOSMOS cosmonaut.

The Chinese and Russians are now [redacted].
 U.S. Technological superiority, the cornerstone of our success since WWI, is threatened and we risk losing our global leadership role.

- Chang'e 10's Mission Objectives:**
- Construction, operation, and maintenance of humanity's first sharing platform [redacted];
 - Supporting long-term, large-scale scientific exploration;
 - Technical experiments; and,
 - Development and utilization of [redacted]

Budget Scenarios

Scenario A: Increased Budget

- [redacted] is considered an existential threat to the U.S.
- the X budget immediately grows from \$20B to \$30B to counter this foreign threat.
- SBIR/STTR program receives a dramatic increase too as the Agency organizes around the XYZ objective.
- SBIR/STTR program receives a mandate to focus that increase on ABC.

Scenario B: Constant Budget - X must refocus the current budget to XYZ:

- President and congress satisfied with evolutionary growth lead by the new space commercial sector.
- X budget remains the constant at \$20 Billion
- SBIR/STTR program receives no additional budget as the U.S. maintains its focus on DEF.
- SBIR/STTR program receives a mandate to increase focus on GHI.

2 of many future scenarios

Earth Shot – Existential Threat



Today is April 22, 2030 – EARTH DAY – Environmental instability is occurring at critical levels with impacts exceeding predicted levels.

- U.S. Impacts:**
- Sea level rose more than 7 inches higher with coastal area land loss and wetland destruction.
 - Annual average temperature for the contiguous U.S. is 2.9 degrees F hotter making the previously hottest recorded years of the 2010s feel average and setting the course for irreparable damage.
 - Spring rains in the Midwest and Northeast are up an average of 10-20% depending on the state and down by 30% in the Southwest;
 - Preparations have begun for a record Hurricane season with rapidly forming, high-intensity storms expected dump 15% more rain than storms in the previous century.

Budget Scenarios

Scenario A: Increased Budget

- Environmental change is considered an existential threat to the U.S.
- the X budget immediately grows from \$20B to \$30B to counter this foreign threat.
- SBIR/STTR program receives a dramatic increase too as the Agency organizes around an XYZ focused on ABC
- SBIR/STTR program receives a mandate to focus that increase on developing technologies for ABC work.

Scenario B: Constant Budget - X must refocus the current budget to DEF:

- Given the debt and other concerns, the President and Congress keep their focus on other pressing issues.
- X budget remains the constant at \$20 Billion
- SBIR/STTR program receives no additional budget as the U.S. maintains its focus on domestic and international issues.
- SBIR/STTR program receives a mandate to increase focus on ABC.

2 of many more future scenarios



Forecast: Cortana-like AI tool that takes on the burden of digital file management and program education

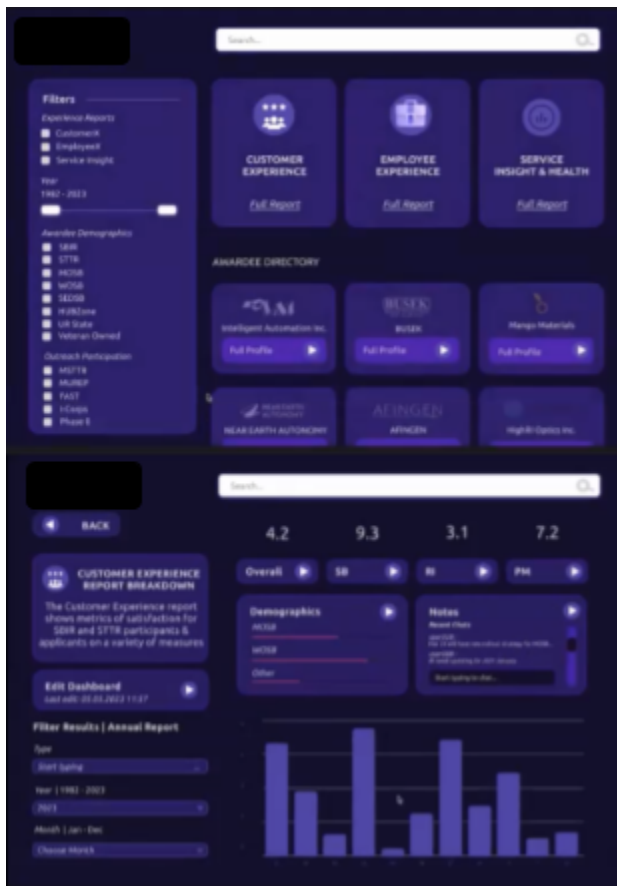
This Cortana-like AI tool would be accessed by potential/current applicants through a wide online portal (in this Future, [redacted] different programs/departments will be more unified).

Applicants would have to make a username and password, fill out personal information including contact information and their institution/business, their past history with [redacted] and SBIR/STTR. They would also have to submit a facial scan and thumbprint/fingerprint (with your smart device) to take part in the application process. After submitting your information, you'll be greeted by the Cortana-like AI through your smart device using augmented reality.

Another future scenario

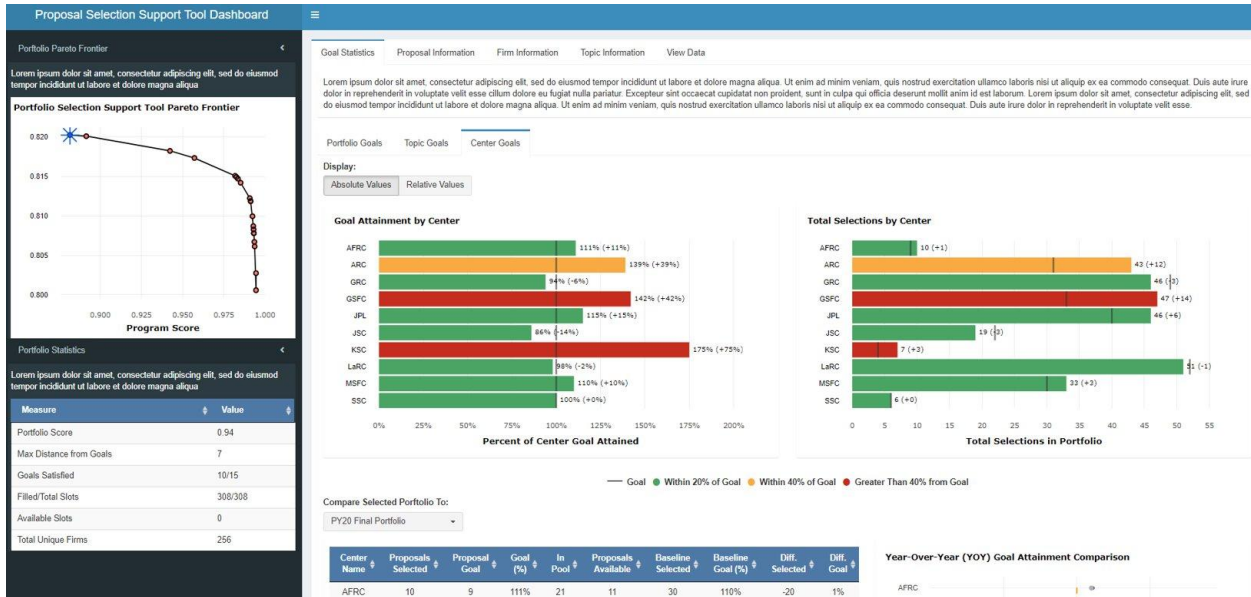


Landing page with 3 scores visible to users - CX, EX, and SI

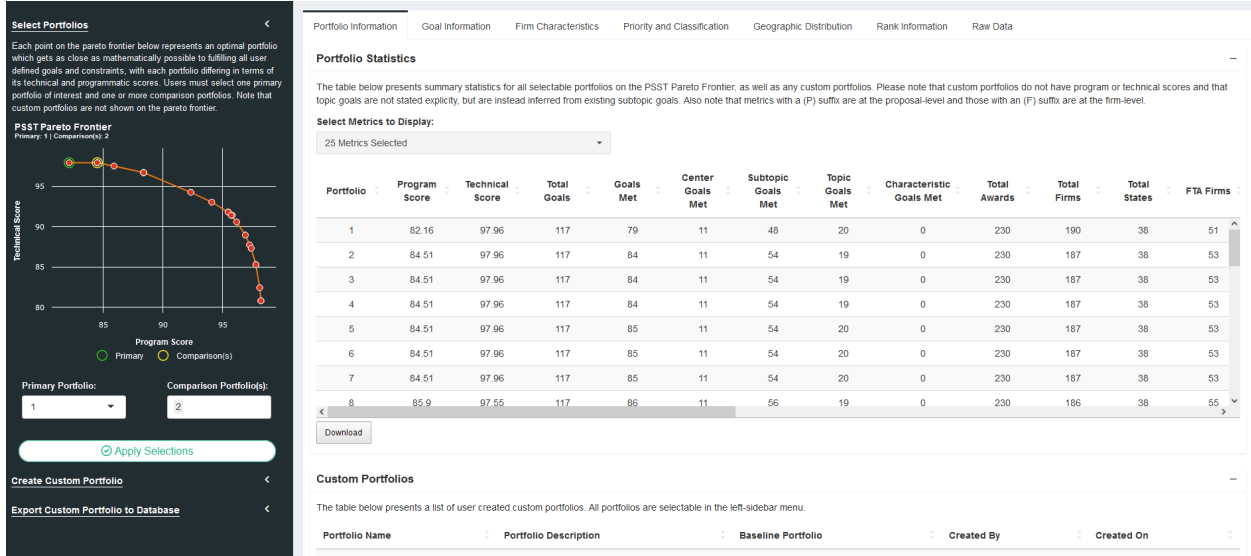


Top Figure: CX/EX/SI Dashboard

Bottom Figure: CX Dashboard Disaggregated by Customer

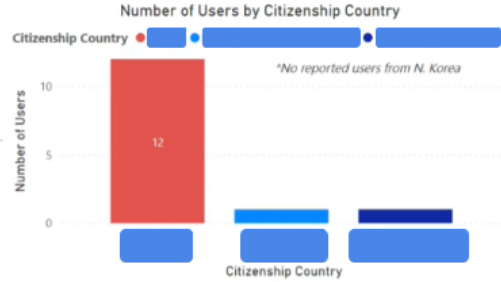
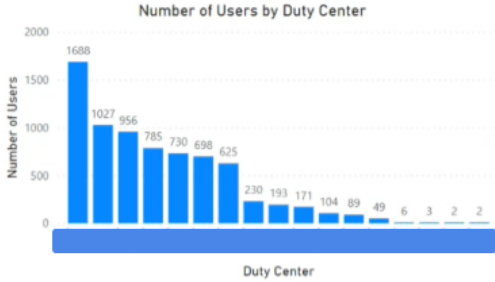


Portfolio selection tool: View 1



Portfolio selection tool: View 2

Access and Risk Assessment



7358
Total Users
7355
Active
3
Off-Boarding



Security Check Dashboard

Victor - STTR Journey Map Critique - Rubric

	A	B	C	D	E
2		Yes - 2 pt	Somewhat - 1 pt	No - 0 pt	
3	Does the visualization clearly and simply show the temporal overlapping of phases (when it occurs)?				Notes
4	Phase I / Phase II	Y			
5	Phase II-E inside of Phase II	Y			
6	Phase III being able to start during Phase II or I (but usually Phase II) or after Phase II	Y			
7	TABA inside of Phase I	Y			
8	TABA inside of Phase II	Y			
9	I-Corps inside of Phase I		Y		I-Corps is a mod, closeout the same as phase closeout
10	I-Corps inside of Phase II-E		Y		I-Corps is a mod, closeout the same as phase closeout
11	I-Corps inside of CCRPP		Y		
12	Does the visualization clearly and simply show the connection between phases at specific steps?				Notes
13	Connection between Phase I and Phase II	Y			
14	Connection between Phase II/Phase II-E and CCRPP	Y			
15	Connection between Phase II/Phase II-E and Phase II-S	Y			
16	Connection between CCRPP and Phase II-S		Y		CCRPP shows arrow at the end going back to CCRPP; should go to Phase II-S
17	Possible connection between Phase I and Phase III	Y			
18	Possible connection between Phase II and Phase III	Y			
19	Phase II/II-E back to Phase I		Y		Arrow seems to indicate going to CCRPP or Phase II-S

Example Design Critique Rubric

GOALS →	1 - LEARN	2 - COMMUNICATE	3 - SEARCH	4 - FIND	5 - APPLY	6 - RECEIVE	7 - MANAGE
Engagement	Read and learn information about SBIR and STTR.	with SBIR/STTR for info & questions or with former small business awarders	through applicable solicitations to find topics to which I can apply.	a researcher, research group, or investor willing to partner on similar technology.	for funding or technical assistance along with the small business.	a response on funding decision, other opps & feedback to improve if I apply again.	an SBIR or STTR award and its resources alongside NASA counterparts.
Care Functionality that satisfies the user's basic needs. These are the minimal expected features that users believe are standard on all products in a specific context.							
Use Enhanced functionality that increases usability of the product. Without these features, the product has minimal appeal to the user.							
Engage Functionality that draws the user to interact further with the product. These features draw the user to return to the product in the future.							
Explore What is the customer feeling? Eg: Use the email app to express your opinions.							

Product prioritization board of SB user stories for new product resulting from service research, using Systemico method

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SBIR/STTR Spring Learning Series (2023)

This is a quick survey to see how many people in the SBIR/STTR program would be interested in a return of the summer learning series this spring (meaning starting March 2023 through May 2023), which short courses they prefer, and when would be best. If it goes well, if enough people want to continue, and if enough people miss this spring set of courses, we may continue in the summer of 2023.

NOTE: Please answer the multiple choice and short answer questions which we will combine and let you know the results.

Which of the following workshops would you sign up for, make space in your calendar, and actually attend if offered to SBIR/STTR? Select ALL that you would attend. *

[NOTE: Do not factor your schedule or calendar in the decision, as we will ask another question about when is best. This is only about desire and intent.]

- BUILD A STRATEGY. Overview: This course is designed to be a practical and immediately applicable intro...
- BUILD EFFECTIVE SLIDES. Overview: This course will help you develop your visual design skills for slide d...

[Spring 2023 Learning Series Poll](#) including new courses on Office 365, Strategic Foresight, Systems, etc.

SERVICE VISION

Connect diverse and representative small businesses and researchers to X PMs and provide technical and financial support to fulfill X technology gaps, stimulating the economy and facilitating commercialization and X infusion.

Service Vision part of Service Design System

For Innovators

Who are looking for financial and technical support

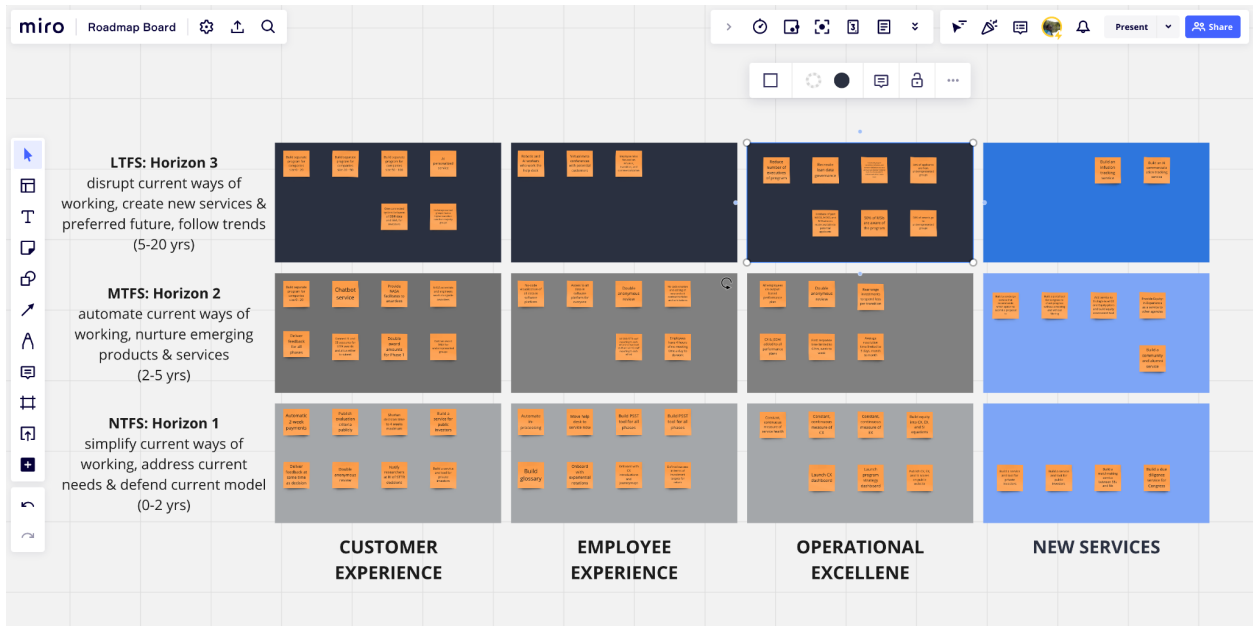
SBIR/STTR is a technology development and assistance and small business-researcher matching service

That allows innovators to apply for and engage with non-dilutive funding and support for commercialization

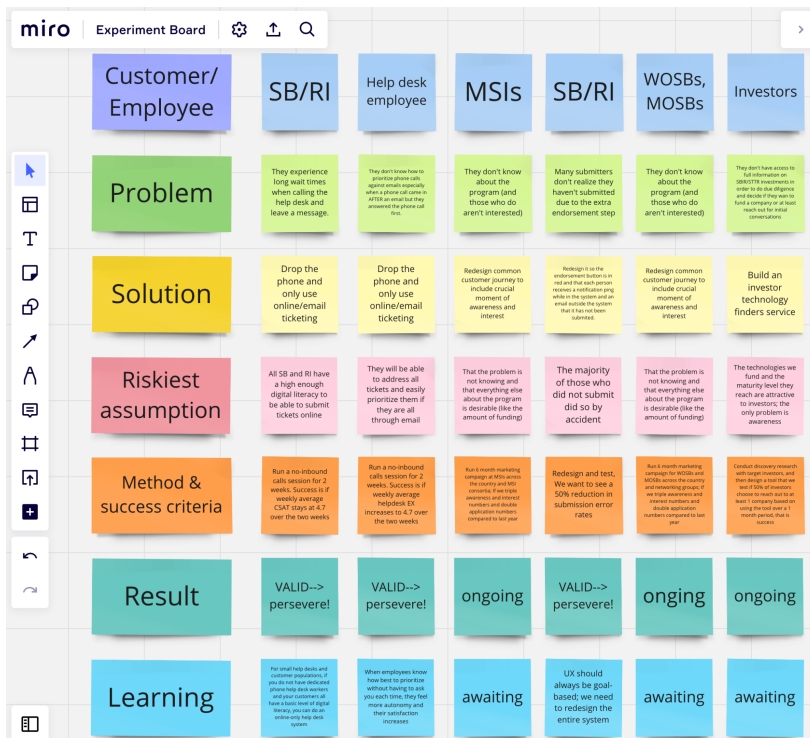
Unlike traditional investment opportunities that require equity/debt and commercial proof of concept

Our service is completely non-dilutive, uniquely supportive, and R&D friendly

Service Positioning Statement (for Innovators), Part of Service Design System



3-Horizons Roadmap Board from Current State (CS) to Near-term future state (NTFS) and eventually to long-term future state (LTFS)



Experiment board