

NSA Site Redesign



Introduction

Earlier this year my team redesigned the National Security Agency's desktop and mobile version of their website. The agency is responsible for the U.S. Government's cryptology and information assurance.

Although their responsibilities are crucial, their site's UI/UX left much to be desired. The site felt cluttered with information, and it did not make the agency feel like a professional entity of the U.S. government.

Objective

Our team's goal when redesigning the site was to improve the information hierarchy and give the visuals an overall facelift to legitimize the NSA's professionalism. We did not want to take away any of the information that currently lives on the site but felt that there were better ways of consolidating what was already there.

Our main objectives were to:

Research who the users were and their goals.

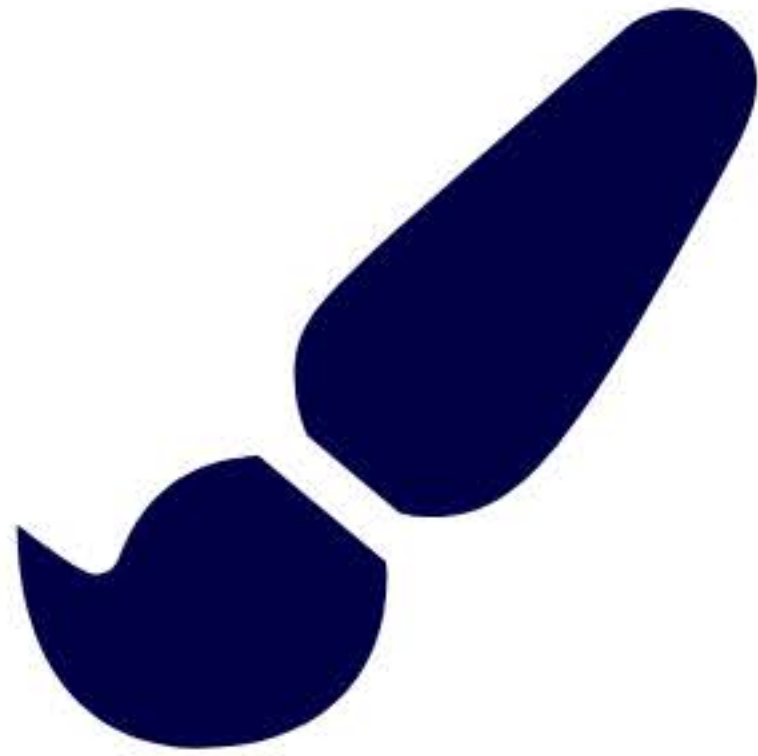
Analyze what the most crucial navigation items were.

Redesign the site to feel professional and reduce bounce rates.

My Responsibilities

- 1. Conduct User Research**
- 2. Develop User Personas**
- 3. Conduct Card Sorting**
- 4. Develop Sitemap**
- 5. Wireframe**
- 6. Create Multiple Prototypes**

Team



2 Designers

(Myself as Lead Designer)



1 Project Manager



3 User Researchers

(Myself included)

Tools



Research

Aside from our own personal journeys through the NSA site, we did not know much about the NSA or their digital presence. We also did not have any connection to stakeholders, so our team knew our first challenge was to come up with educated solutions on how we could improve the site on a general level.

We defined those problems with:

1. Usability Testing

2. User Persona

3. Heuristic Analysis

4. Competitor Analysis

Usability Testing

Before our testing began, our team came up with a User Testing Plan that would have our users complete 6 tasks. Those tasks were:

1. **Contact Small Business Programs**
2. **Navigate to the NSA Programs for Innovation page**
3. **Locate the Partnerships form**
4. **Navigate to any of the NSA social media pages**
5. **Find the Terms of Use page**
6. **Reach the Cybersecurity Products and Services page**

GOAL/OBJECTIVE:	Why are you doing the test? What are you hoping to learn?
TASK 1:	
Research Question:	Can you contact the office of Small Business Programs?
Goal/Output:	Navigate from the homepage to the contact NSA - office of small Business Programs.
Assumptions:	Will be confused on navigation from homepage but once user find Small Business Programs application should be easy to fill-out.
Scenario/Steps:	(1) Homepage (2) Doing Business with Us dropdown menu (3) Getting Started (4) hyperlink to <i>contact the Office of Small Business Programs</i> .
Success Criteria:	Complete in under 90 seconds.
Notes:	
TASK 2:	
Research Question:	Can you find the NSA Programs for Innovation page?
Goal/Output:	Navigate from the homepage to the NSA Programs for Innovation page.
Assumptions:	Will be confused on where to find programs and it is not first under Search or in Programs tab.
Scenario/Steps:	(1) Homepage (2) Doing Business with Us dropdown menu (3) Business Programs and Resources (4) hyperlink to <i>NSA Programs for Innovation</i>
Success Criteria:	Complete in under 90 seconds.
Notes:	
TASK 3:	
Research Question:	As a cybersecurity professional can you find how to partner and contact the NSA?
Goal/Output:	Navigate to cybersecurity partnerships and find the contact us link.
Assumptions:	This could take more than one path as the user may try to use the Search at the top and it is the fourth link.
Scenario/Steps:	(1) Homepage (2) Resources dropdown menu (3) Cybersecurity Professionals (4) Partnership (5) hyperlink to <i>Interested in Discussing Cyber with NSA? Contact us!</i>

Usability Testing

With plan in place, our team conducted tests on 6 users from various backgrounds. We found that tasks like navigating to the social media pages and terms of use page were easy for our users.

When asked to go to pages that were hidden behind multiple navigation dropdowns and confusing titles, all our users could only partially complete the task.

TASK	SUCCESS RATE	Participant 1	Participant 2 - Desktop	Participant 3				KEY	SCORE
Task 1: Can you navigate to any of the NSA's social media pages?	100%	1	1	1				User successfully completes task	1
Task 2: Can you go to the Terms of Use page?	100%	1	1	1				User partially completes task	0.5
Task 3: Can you navigate to the Cybersecurity Products & Services page?	67%	0.5	1	0.5				User does not complete task	0
Getting to Know You Questions		Participant 1	Participant 2	Participant 3					
What's your occupation? What do you do all day?		Retail Manager, Computer Work & Sales floor manager	Teacher, elementary reading specialists	Sales Manager, team management and sales					
Roughly how many hours a week altogether—just a rough estimate—would you say you spend using the internet, including web browsing and email, at work and at home?		60 Hour	50 hours	80 Hour					
What kinds of sites (work and personal) are you looking at when you browse the web?		Amazon, Outlook, Clothing website, BillPay,	Office 365, Pinterest, Power Yoga Institute, Edulastic, News	Office 365, YouTube, Video Games, Netflix					
Do you have any favorite websites?		Reddit, Pinterest, Instagram	News, Yoga	YouTube, Instagram					

TASK	SUCCESS RATE	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5		KEY	SCORE
Task 1: Can you contact the office of Small Business Programs?	33%	0.5	0	0.5				User successfully completes task	1
Task 2: Can you find the NSA Programs for innovation page?	50%	0.5	0.5	0.5				User partially completes task	0.5
Task 3: As a cybersecurity professional can you find how to partner and contact the NSA?	33%	0	0.5	0.5				User does not complete task	0
Getting to Know You Questions		Participant 1	Participant 2	Participant 3	Participant 4	Participant 5			
What's your occupation? What do you do all day?		mortgage analyst, excel spreadsheet, talk with banks	inventor, research, proposals, development, patenting work	nurse, wound care, rehabilitation, paperwork					
Roughly how many hours a week altogether—just a rough estimate—would you say you spend using the internet, including web browsing and email, at work and at home?		30	100	45					
What kinds of sites (work and personal) are you looking at when you browse the web?		social media, work related, news	news, research & development, research	social media, work related classes, information news, entertainment					
Do you have any favorite websites?		Reddit, Spotify, Instagram, Filmzone	Apple news, Google scholar, communication tools	Instagram, Spotify, Twitter, Pinterest, News Platforms					

User Persona

With user research complete, we created a User Persona based on our data.

His name was Amir Rasheed, a 36-year-old Computer Analyst who would be visiting the site in order to get involved with the NSA. He has a background in cyber security and thinks his skills can bring something to the agency.

His main goal was to partner with the agency. Our team noticed that his user journey would face issues when Amir would sift through the poor information hierarchy of the site. Amir is the perfect example of a highly skilled and valuable user who could potentially leave the site due to UX issues.





"I want my security technology to help people on a large scale."

AGE	36
JOB TITLE	Computer Analyst
STATUS	Married
LOCATION	Austin, TX

USER PERSONA

Amir Rasheed

ABOUT

Amir visits the NSA website because he believes his work could help enhance the cyber security currently being used. He has successful tests from digital warfighting cyber threats in multiple languages and would help fight terrorism and cyber-attacks. He goes onto the website to provide an innovative security solution with the NSA.

GOALS

- Wants to partner with others in the cybersecurity field.
- Would like to learn about what work the NSA has been a part of and how they have grown
- Likes to find his information easily and with few steps in between.

PAIN POINTS

- Website has little visual hierarchy
- The navigation is not clear
- There are too many options on the site
- The website does not look like a government site. I am not sure if it is legitimate.

FAVORITE BRANDS



intel®



PREFERENCES

Coding
Reverse Engineering
Online Researching
Gaming
Puzzle Solving



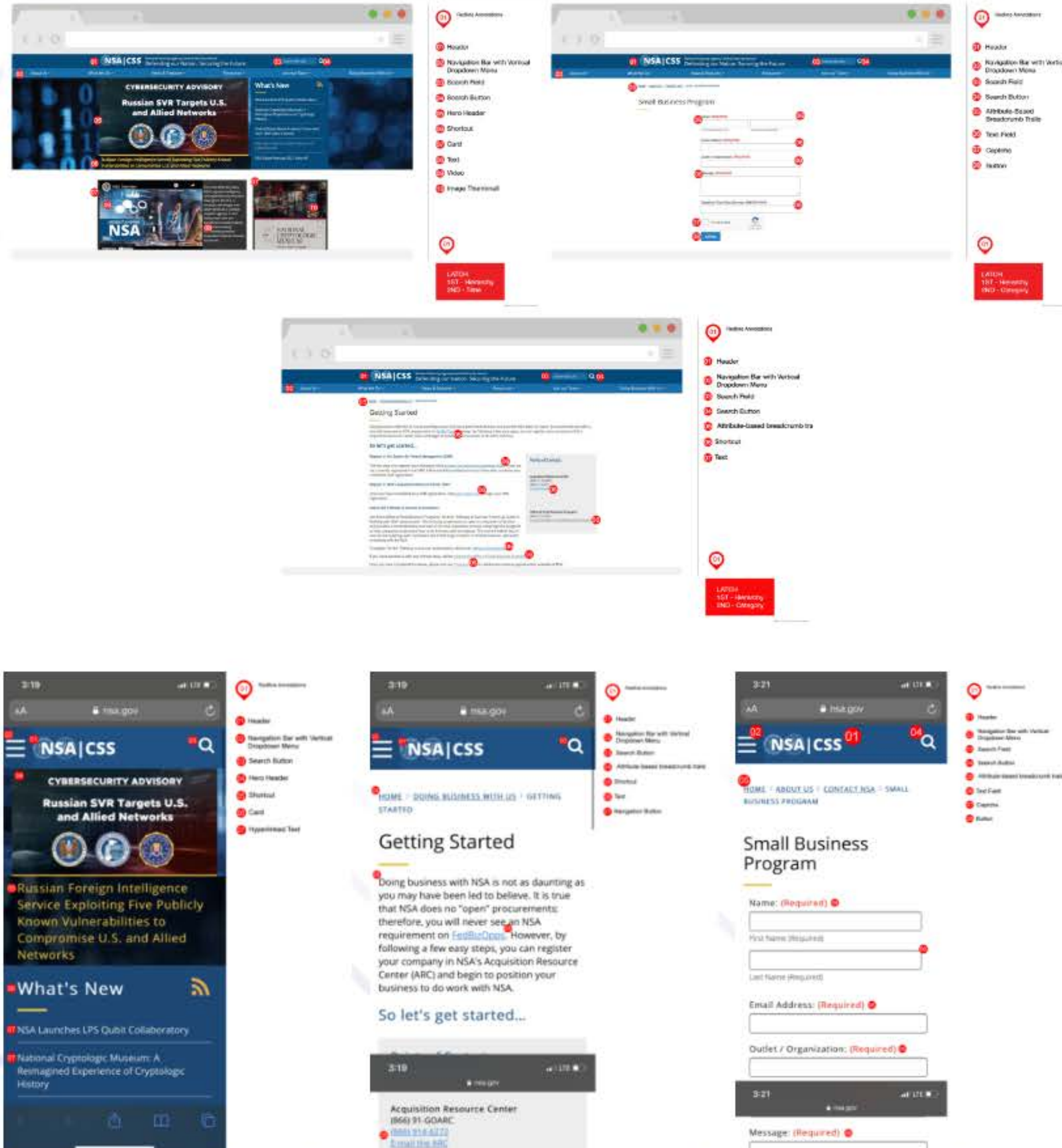
Heuristic Analysis

Our team needed to analyze what the pain points were for the NSA website. We did this by conducting a heuristic analysis. We redlined every main component of various pages and then rated the components a 1, 2, or 3, with 3 being the best score, in 4 categories:

- **Appearance/Aesthetics**
- **Content**
- **Navigation**
- **Efficiency/Functionality**

We found that very few of the items in our rating system scored a 3. Most were in the 2 and 1 level, specifically in the categories of appearance and navigation. This information made it clear that we needed to focus on improving the aesthetics and navigation of the site without forgetting about the functionality and content.

Redlining Images



Heuristic Analysis

Website Name: National Security Agency Central Security Service

Website URL: <https://www.nsa.gov/>

Heuristic	Rating			Comments
Appearance/aesthetics: first impressions are important—they can make the difference between users staying or leaving your site				
Example	3	2	1	
Primary goal or purpose is clear		X		
Clean, simple design			X	
Pleasing color scheme		X		
Appropriate use of white space			X	
Consistent design		X		
Text and colors are consistent		X		
Icons are universally understood			X	
Images are meaningful and serve a purpose			X	
Content: users are at your site for the content—make it easy for them to find and use your site				
Major headings are easy to understand		X		
Easy to scan			X	
Minimal text/information presented	X			There is a lot of text heavy sections, but maybe lessen the text to make it more eye pleasing than overwhelmed by the massive paragraphs
Clear terminology; no jargon		X		
Links are clear and follow conventions		X		
Help is available on every page			X	
Important content is above the fold			X	
Search box is easy to identify and easy to use	X			
Navigation: make getting around your site easy and eliminate the user's guesswork				
Consistent navigation		X		
Easy to identify your location on the site (breadcrumbs, headers, colors)		X		
Consistent way to return home		X		
Limited number of buttons and links			X	
Organization of information makes sense			X	
Efficiency/functionality: following basic rules will keep user frustration to a minimum				
Website loads quickly	X			
Custom 404 errors	X			
Error messages are meaningful			X	
Login is in upper-right corner of page				N/A
Proper etiquette for links off site			X	
Contact information is easy to find			X	
Login is easy to find				N/A
Hours are easy to find			X	
No broken links		X		There is a link, when clicking it there is a pop up error indicating that the website could possibly steal your personal/finacial information.
User knows the status of searches		X		
User knows if they are logged in/out				N/A
System supports undo and redo				N/A
Forms autofill and calculate when practical			X	

Competitor Analysis

Our last bit of research was to look at what competitors the NSA had. We analyzed the websites for:

- **U.S. Department of Treasury**
- **Department of Homeland Security**
- **British Council**

We found that these sites had some of the same issues that the NSA had, but did a better job with their presentation of brand and information. Our goal with these insights was to take some of the best pieces of these sites as references when we began redesigning.

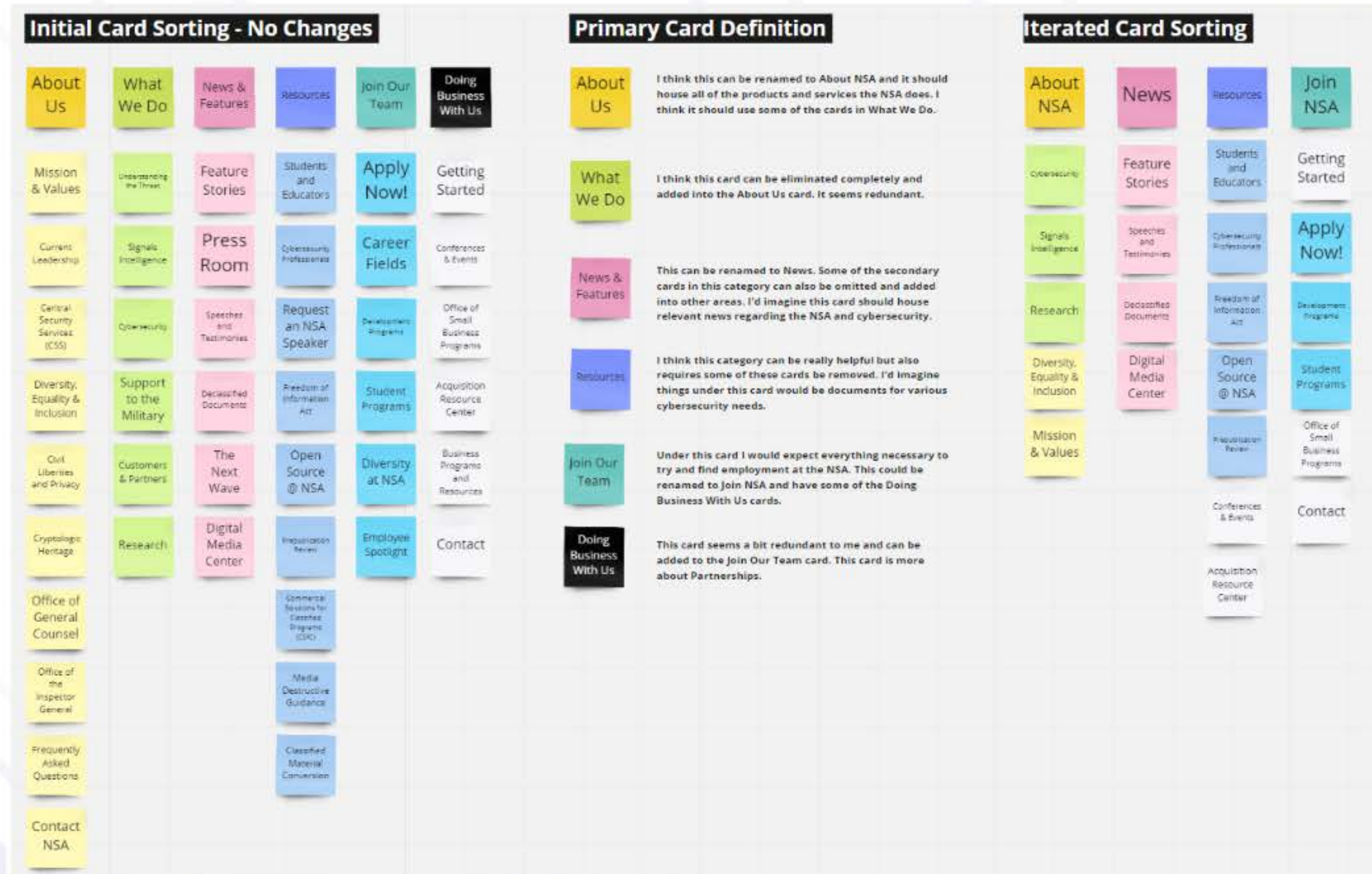
Onboarding Competitive Analysis	Feature Analysis	Competitive Advantage	Strengths	Weakness	Customer Reviews
DIRECT COMPETITORS					
U.S Department of the Treasury	Website & Mobile friendly.	Website is available in multiple languages. Everything shortly catergorized	Ogranized, so user can find the topics they are looking for	There are a lot of links that lead to different servers	
Department of Homeland Security	Website & Mobile friendly.	More organized menus throughout the site.	Consistent bottom footer with necessary links	Very text heavy and has tabs that questions what user is looking for.	"Homeland Security has terrible management."
INDIRECT COMPETITORS					
British Council	Website & Mobile friendly. Clean layout	Not so text heavy as the NSA. Clear information that doesn't to too many foreign websites	Triad color scheme	Big Footer with little contact information	"Very bad experience! Requests and complaints are being ignored for weeks and I haven't received any responses."

The background of the slide features a complex, abstract pattern of light purple lines and dots, resembling a circuit board or a network diagram. The lines are of varying thickness and connect various points, creating a sense of flow and connectivity. The dots are small and serve as nodes or endpoints for the lines. The overall aesthetic is clean, modern, and tech-oriented.

UX Redesign

Card Sorting

The first step in our UX redesign process was to figure out how much information was already on the site. With dropdown menus hiding multiple nav items, we recorded each option available and began card sorting. We laid everything out and organized them as is and then began to compartmentalize the items to reduce clutter.



Long and Questionable Names

Primary nav items with wordy and sometime ambiguous titles were a major issue. As part of the card sorting process, we changed some of the title names to be more concise and house specific secondary nav items.

Previous Primary Navigation

About Us

What We Do

News & Features

Resources

Join Our Team

Doing Business With Us



Redesigned Primary Navigation

About NSA

News

Resources

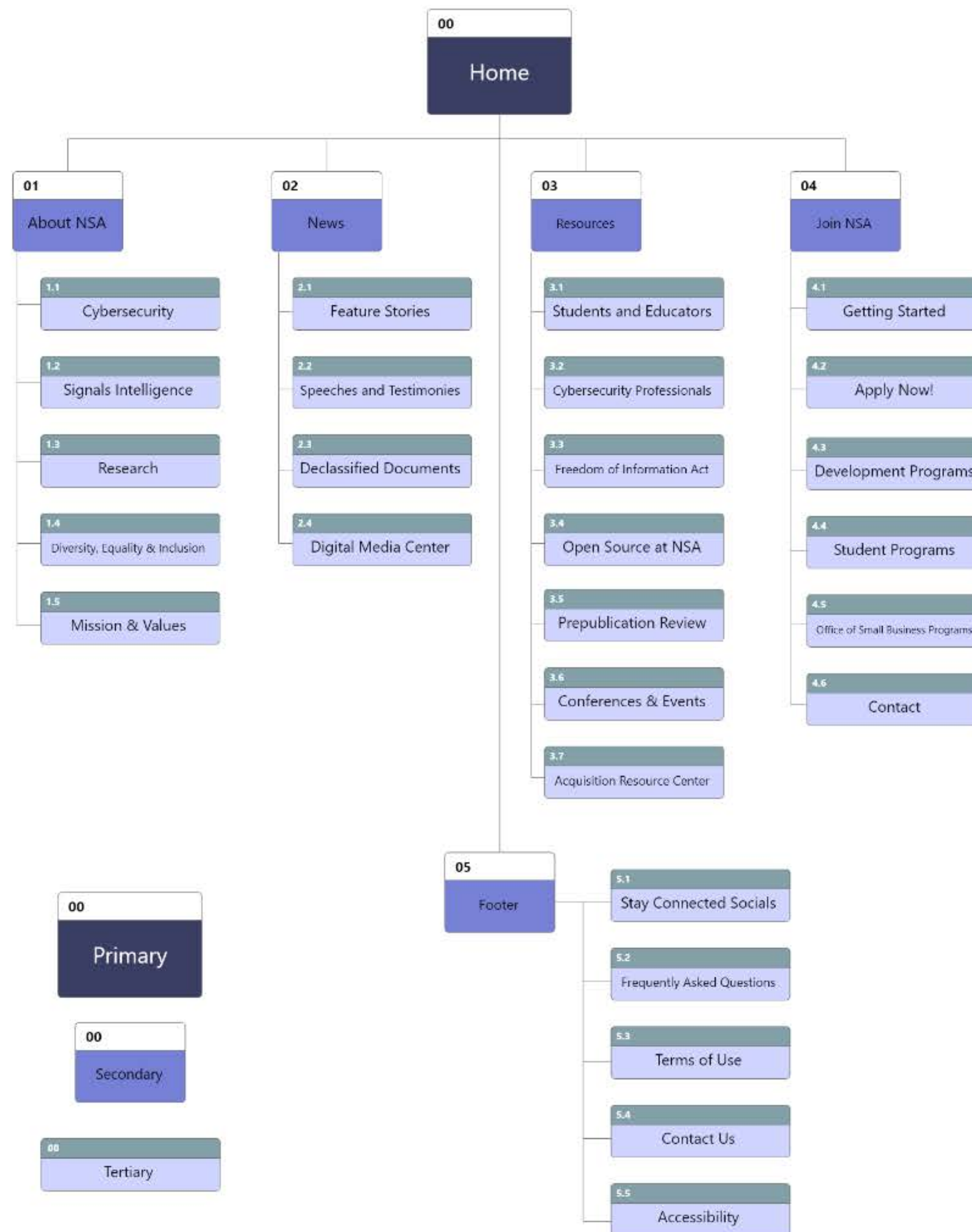
Join NSA

Sitemap

With our cards sorted, I created a sitemap to update the navigation. I felt it necessary to bring down the 6 primary nav items down to 4. Those items would also have revised titles that would make them more easily recognized. They were:

- **About NSA**
- **News**
- **Resources**
- **Join NSA**

For some of the more miscellaneous items, I decided to house them in the footer to take away from the limited space in the header. The footer suffered from having too many links, so I refined that navigation as well.



Let's Make A Hero

The hero image on the website acted more as a news headline segment and displayed too much information at once. When redesigning this portion, I wanted the hero image to have a clear statement that defined the NSA and a video that could give interested users more information on the agency. All the news links that previously were in the hero would now live in their own segment called NSA Headlines.

[About NSA](#)[News](#)[Resources](#)[Join NSA](#)

National Security Agency Central Security Service

Defending Our Nation. Securing Our Future.

For more than 65 years, NSA's signals intelligence and cybersecurity missions have given the U.S. a strategic advantage over adversaries as a combat support agency. In this video, hear how our excellence in code-making and code-breaking consistently produce important national security outcomes.



NSA HEADLINES



NSA's Contribution to a Greener Planet



Creating Cards

The lower half of the site housed 3 cards that had various secondary links. On the original site they were bland and had no significant visual hierarchy. I redesigned them to have color and font weight variety. I also had each card's header image substituted for an icon of similar meaning.





UI Redesign

A major issue we had when redesigning the site was the lack of brand guidelines.

We pieced together our own brand guidelines from the current visuals of the site.

Color

Their current color palette was comprised of white, yellow and a couple shades of blue and grey. Our first iteration of the site kept much of the same colors. We rearranged the palette in a way that used more white for negative space and used yellow to highlight areas of interest.

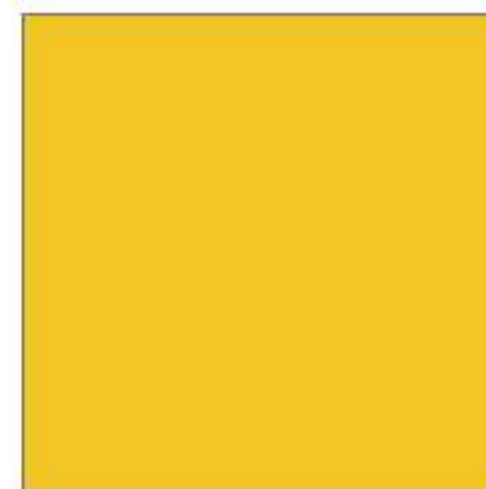
I would later iterate on this palette and integrate new colors to make the site feel more official.

COLOR PALETTE

PRIMARY



SECONDARY



GRADIENT



Typography

The site previously only had one font-family with various font-weights for variety. This did not offer much in terms of visual hierarchy, so I changed it to two other fonts. I chose Libre Baskerville as the header and body font because it offered a traditional look and made the heavy text areas feel more like articles. Roboto would be used to highlight links and navigation items since it was very clear to read.

UI STYLE: TYPOGRAPHY

Headline (Libre Baskerville Bold 58pt)

Sub-Headline (Libre Baskerville Bold 48pt)

Primary Tabs (Roboto Med 24pt)

Secondary Tabs (Roboto Light 24pt)

Body Copy (Libre Baskerville Bold 24pt)

Icons

I felt that the NSA site did not have enough iconography to begin with.

Most of the icons I used were as a supplement to the information they were tied with (circles indicating what page you were on, a shield in

the cybersecurity card, etc.) but in the header navigation I wanted to

brand the icons a little more. For both the search bar and the

dropdown menus, I created this kind of motherboard circuit icon in

order to convey that cybernetic feel. It was used sparingly in order to

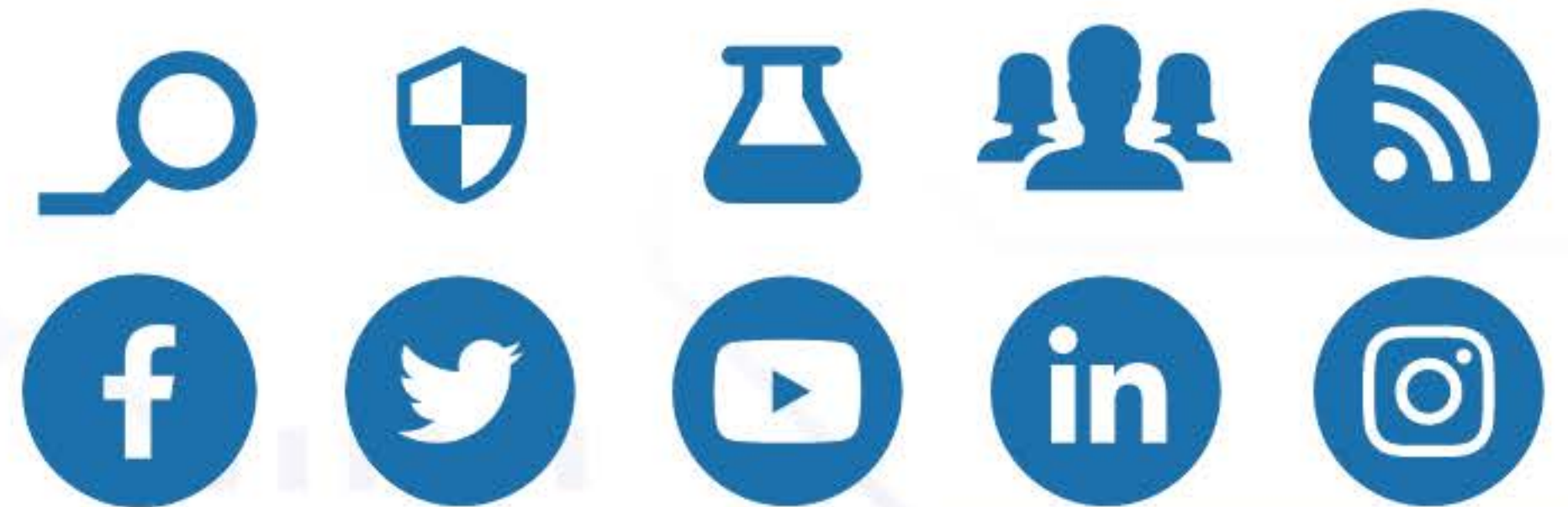
not be too gimmicky but helped push the technological brand of the

NSA. This would be iterated on further later.

BRAND LOGO



ICONOGRAPHY



BUTTON STATES

About NSA

NORMAL

About NSA

NORMAL

About NSA

HOVER

About NSA

HOVER

About NSA

Cybersecurity

HOVER

About NSA

Cybersecurity

ACTIVE

About NSA

DISABLED

Search NSA CSS

NORMAL

Search NSA CSS

ACTIVE

f

NORMAL

f

HOVER

f

ACTIVE

NORMAL

ACTIVE

☐ INACTIVE
 ☐ INACTIVE
 ☐ OFF

☐ HOVER
 ☐ HOVER
 ☐ ON

☒ ACTIVE
 ☒ ACTIVE

☒ INACTIVE

☒ HOVER

☒ ACTIVE

INACTIVE

ACTIVE

Password

Text Field

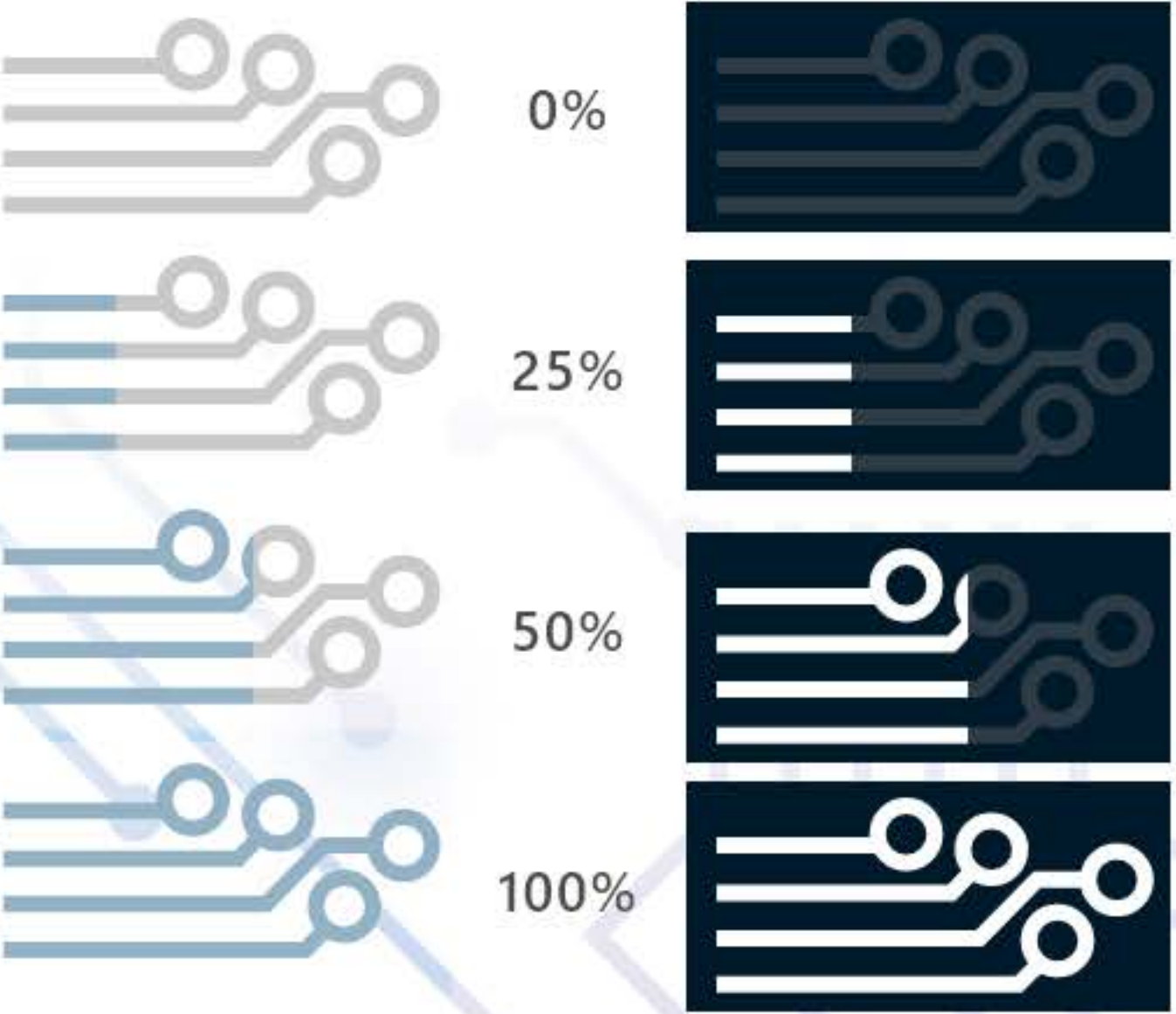
MM	DD	YYYY
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MM	DD	YYYY
		2021
		2020
		2019
		2018
		2017

Home < First Page < **Second Page**

1	2	3	4	5
---	---	---	---	---

MM	DD	YYYY
		2021
		2020
		2019
		2018
		2017





Final Iteration

Second Round of Testing

Although the site had received a nice face lift with the Mid-fi prototype, we still needed to iterate on the design and ensure that our navigation changes were reducing the friction our users had to go through. We provided 10 participants 3 tasks that tested the usability of the navigation.

Those tasks were:

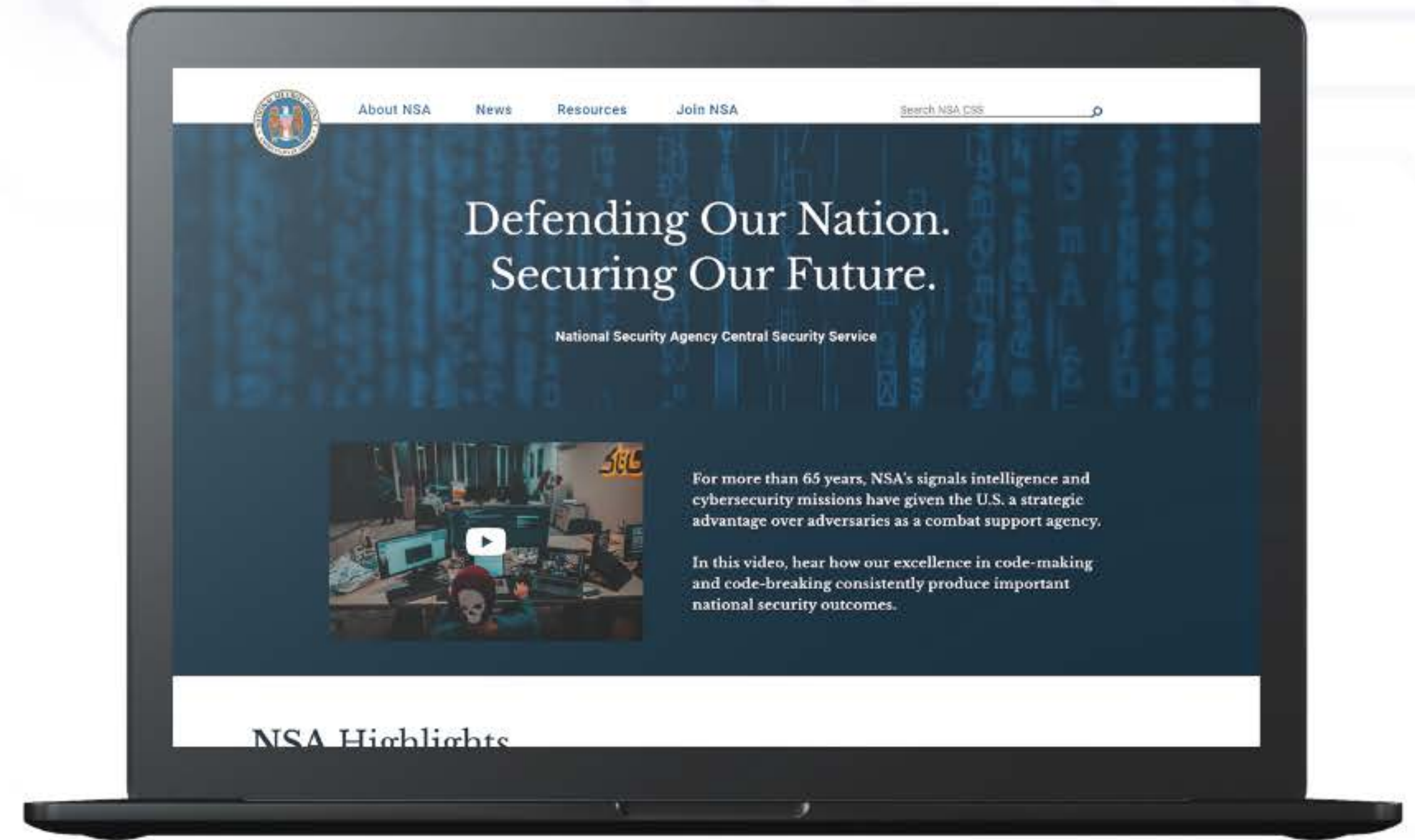
- **Using the Nav Menu**
- **Clicking on the Scroll to Top Button**
- **Hover States of the Dropdowns**

Most of our users completed the tasks with little effort but we still had a handful that had minor difficulties.

TASK	SUCCESS RATE	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8	Participant 9	Participant 10
Task 1: Were you able to use the tab menu with no issues?	100%	1	1	1	1	1	1	1	1	1	1
Task 2: Can you click the bottom arrow in the footer to go back to the top menu?	90%	1	1	1	1	0.5	1	0.5	1	1	0.5
Task 3: Could you hover over the tabs to is the highlight color change?	70%	0.5	1	0.5	1	0.5	1	1	1	1	1
Getting to Know You Questions		Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8	Participant 9	Participant 10
What's your occupation? What do you do all day?		Retail Manager, Computer Work & Sales floor managent	Teacher, elementary reading specialists	Sales Manager, team management and sales	High School Student	Customer Service	College Student	Janitor	Sales Associate	Key-Holder	Steamer
Roughly how many hours a week altogether—just a rough estimate— would you say you spend using the internet, including web browsing and email, at work and at home?		60 Hours	50 hours	80 Hours	90 Hours	60 Hours	70 Hours	40 Hours	50 Hours	50 Hours	90 Hours
What kinds of sites (work and personal) are you looking at when you browse the web?		Amazon, Outlook, Clothing website, BillPay,	Office 365, Pinterest, Power Yoga Institute, Edulastic, News	Office 365, YouTube, Video Games, Netflix	YouTube, Twitch, Video Games	Amazon, Outlook, Clothing	Clothing, Google, Pokemon Go	Amazon, Outlook, Ebay	Vans, Google, Amazon, Crunchyroll	Excel, Google, Outlook, Vans	H&M, Google, Twitch
Do you have any favorite websites/apps?		Reddit, Pinterest, Instagram	News, Yoga	YouTube, Instagram	YouTube, TikTok	H&M, Esty	FashionNova, Pinterest	YouTube, News, Zumiez	YouTube, TikTok, Instagram	Amazon, Twitch, Netflix	Netflix, Spotify

Iteration

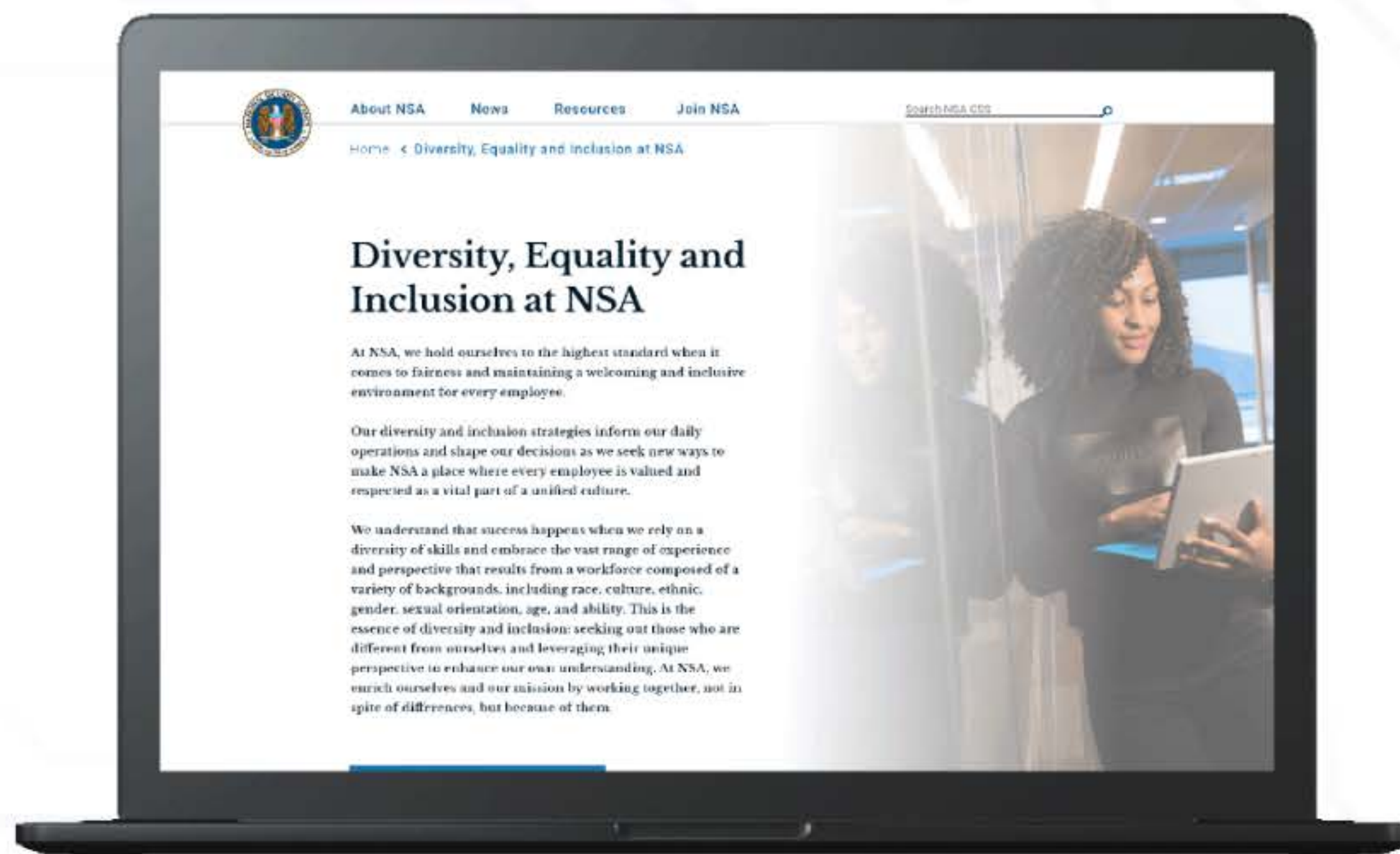
When I came back to the project and reviewed our 2nd round of testing, I felt that we could improve on our original solutions. The main things that were iterated upon were the color palette of the site, the orientation of the homepage and the addition of more pages. These 3 items made the redesign extensive and bolstered the professional look our team had created.

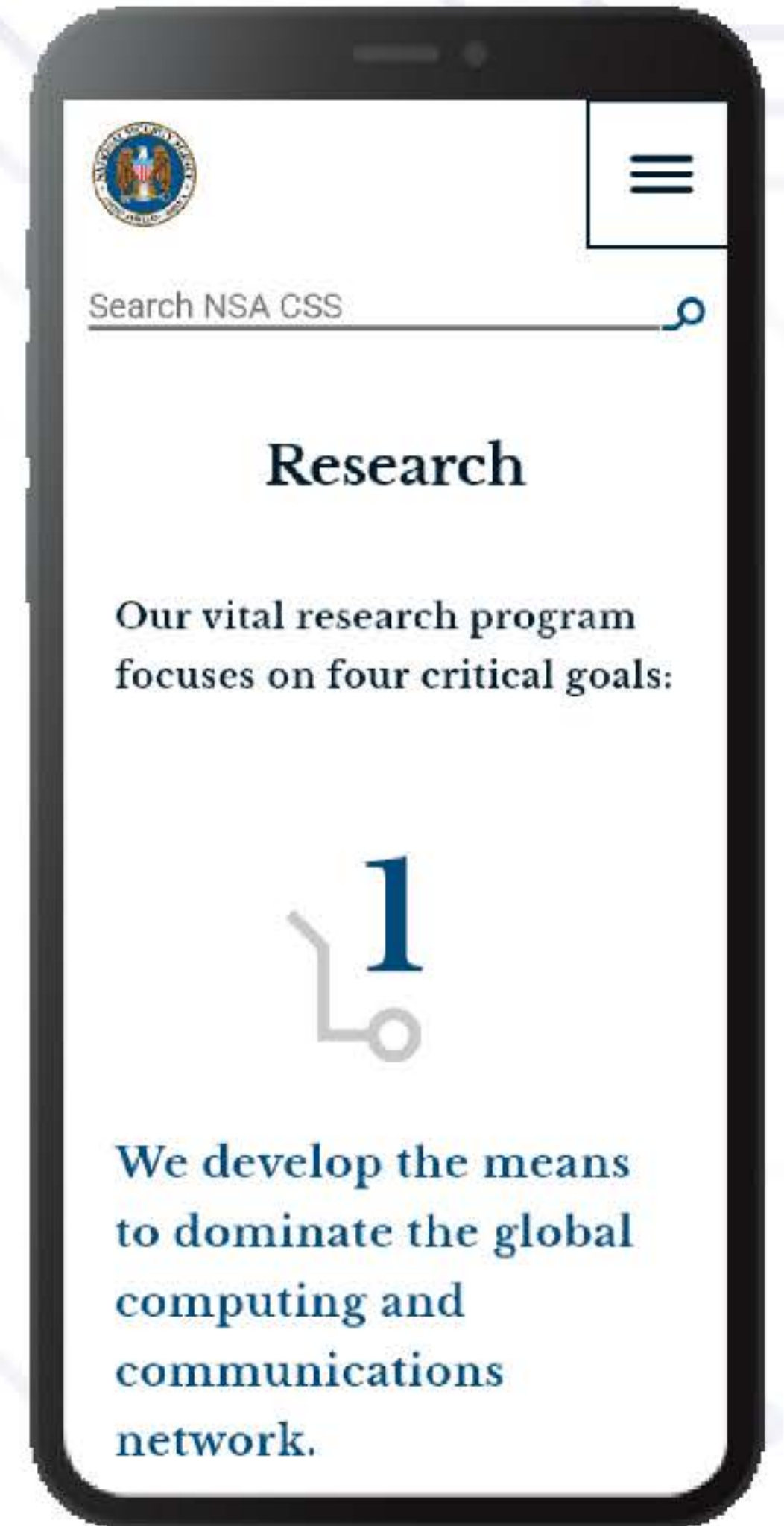
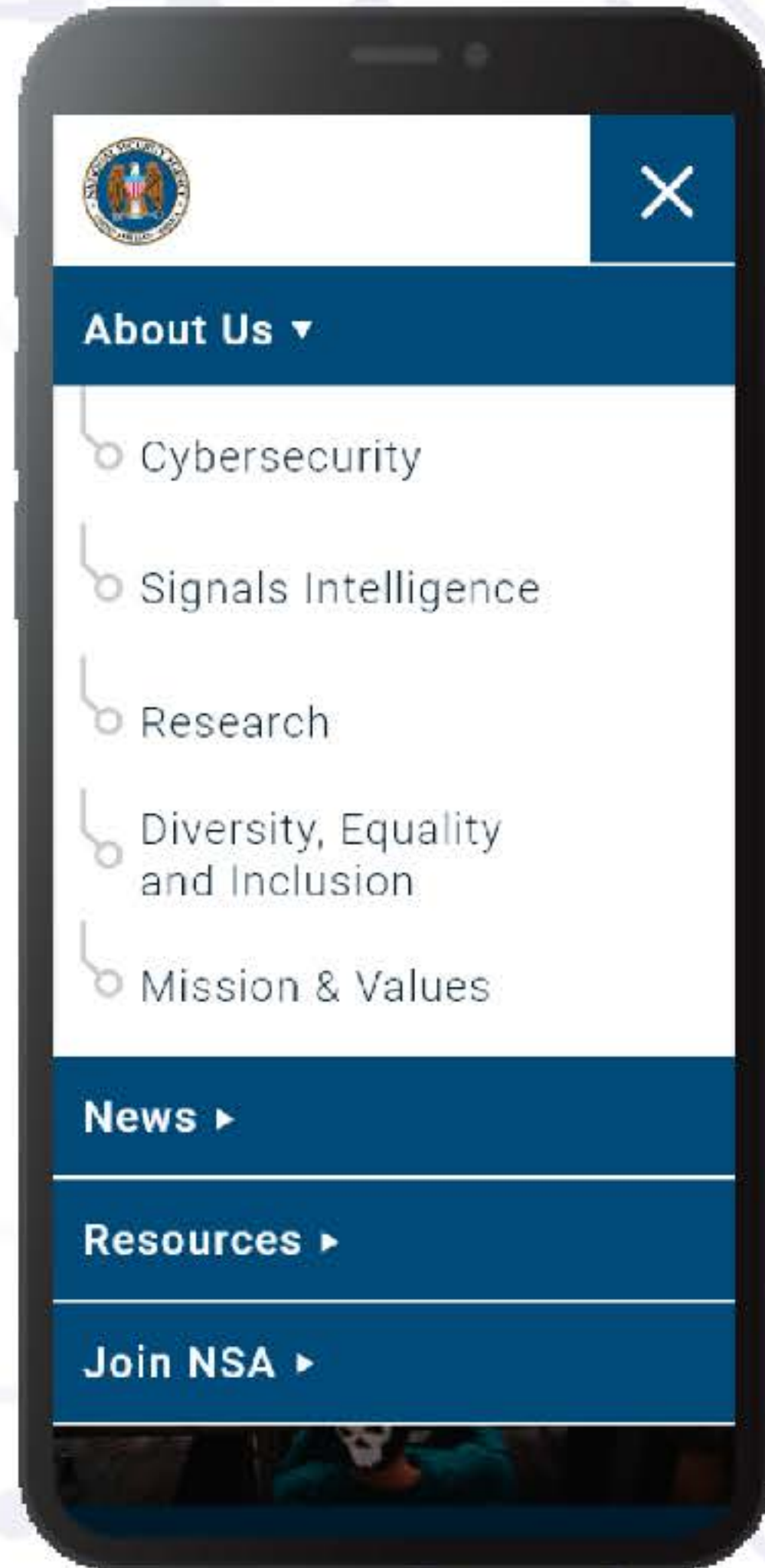
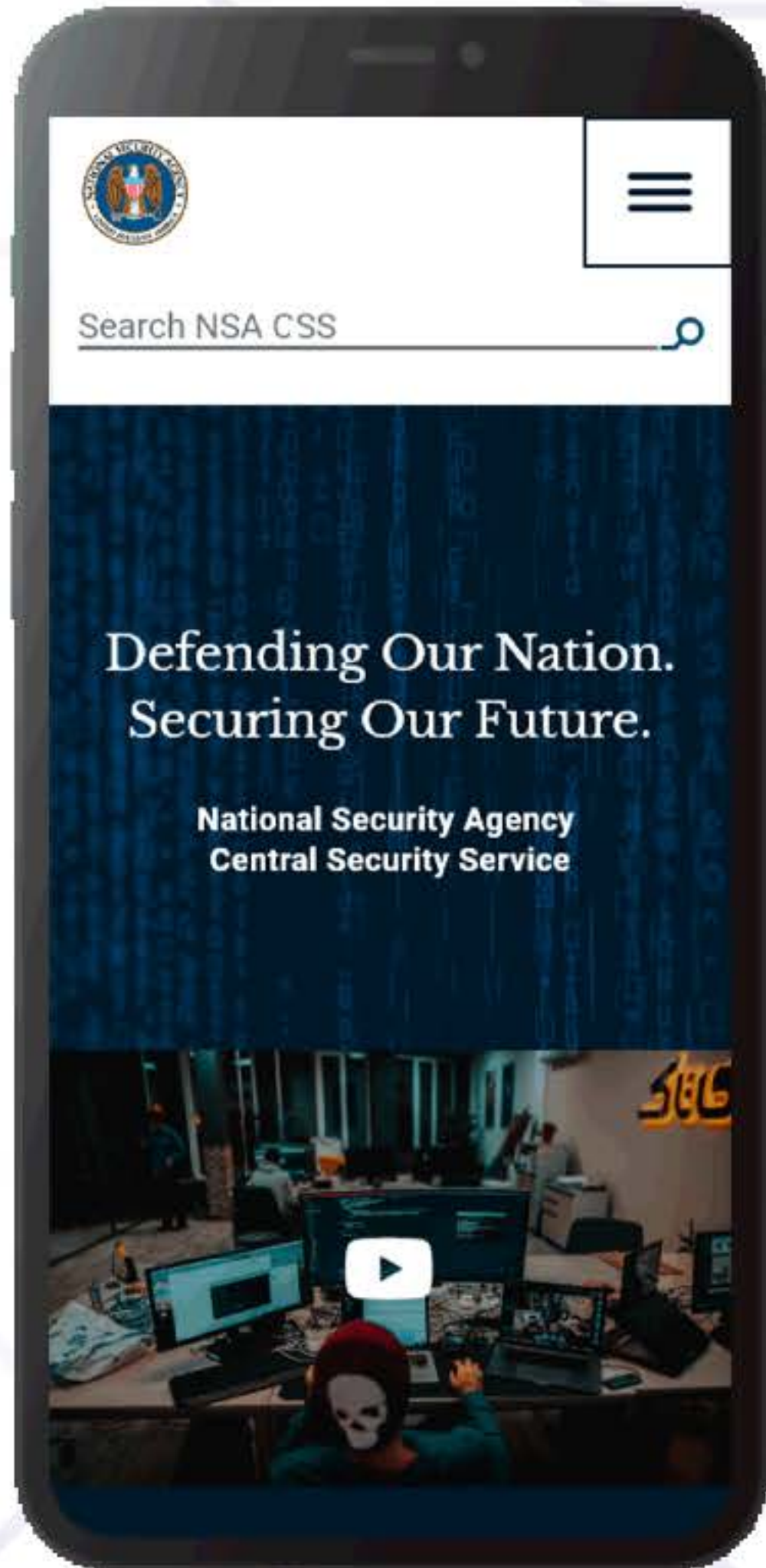




Mockups







Future Developments

The first major development would be to build out this redesign with code. Another set of developments that would help the NSA would be to get the site to be as ADA compliant as possible. We would also like to provide at least one other language option for users who are not native English speakers.

Reflections

Tackling this project was a bit daunting at first since I had no personal knowledge of what the NSA was or what they did. I think that lack of information allowed myself and the team to be more curious about the site's problems and be more creative when it came to defining solutions. This was also the first time I had created a site that was responsive. This showed me how important it is to keep mobile in mind. There were plenty of times where I had to really think about how the desktop assets could fit on a phone screen. Overall I enjoyed the final look and feel of the project and hope to see government websites adopt a better UI/UX in the future.