Selected Projects

Leading a team through a complex and ambiguous problem space

Mozilla Rally was a startup, data cooperative platform, and data research tool. I led end-to-end experience, cross-functional collaboration, and strategy to help define product strategy within an ambiguous greenfield space. I updated the existing design system and created new components for faster iteration and delivery.

Establishing design process and strategy
Reducing friction and finding user value

Mozilla wanted to transform accounts into a central hub for its growing product line. I established the design and cross-functional processes and led strategy and end-to-end experience. I mentored three designers across two products and reduced friction across the experience.

Breaking down silos and aligning product to users' mental models

Mars Business Recovery Management platform
I gathered insights, streamlined processes, and uncovered user motivations and pain points, which led to increased engagement and enrollment for an enterprise platform. I helped increase site enrollment by more than 125%, increased web traffic by more than 125%, and Reduced the annual run cost of the program from 4 to 1.8 million dollars.

Mars Global Risk and Resiliency Platform
The success of the first platform led to expanded scope, trust of stakeholders, connections across silos, and user-centric transformation where the product aligned with end users' mental model and use cases leading to more effective resiliency plans.

Creating tools for research and learning

Artstor is an EdTech publishing, cataloging, and publishing software company. In this role, I was able to create elegant tools for research and learning.

About

Hi, I'm Casey Tang, a design leader from NYC with over 12 years of experience. I combine human-centric design, data, aesthetics, and technology to create impactful solutions. My background in design and technology at MIT has shaped me into a strategic thinker focused on scalable solutions. I am a lifelong learner. Currently, I'm delving into applied category theory, math, and logic with an Oxford professor to better understand and navigate complex data-driven environments. My side projects blend design and technology with ecology, including creating a documentary on a Japanese Garden, 3D spatial audio ecological experiences, and forest gardens. I've lectured on tech and design at Mozilla, CUNY, and Parsons.
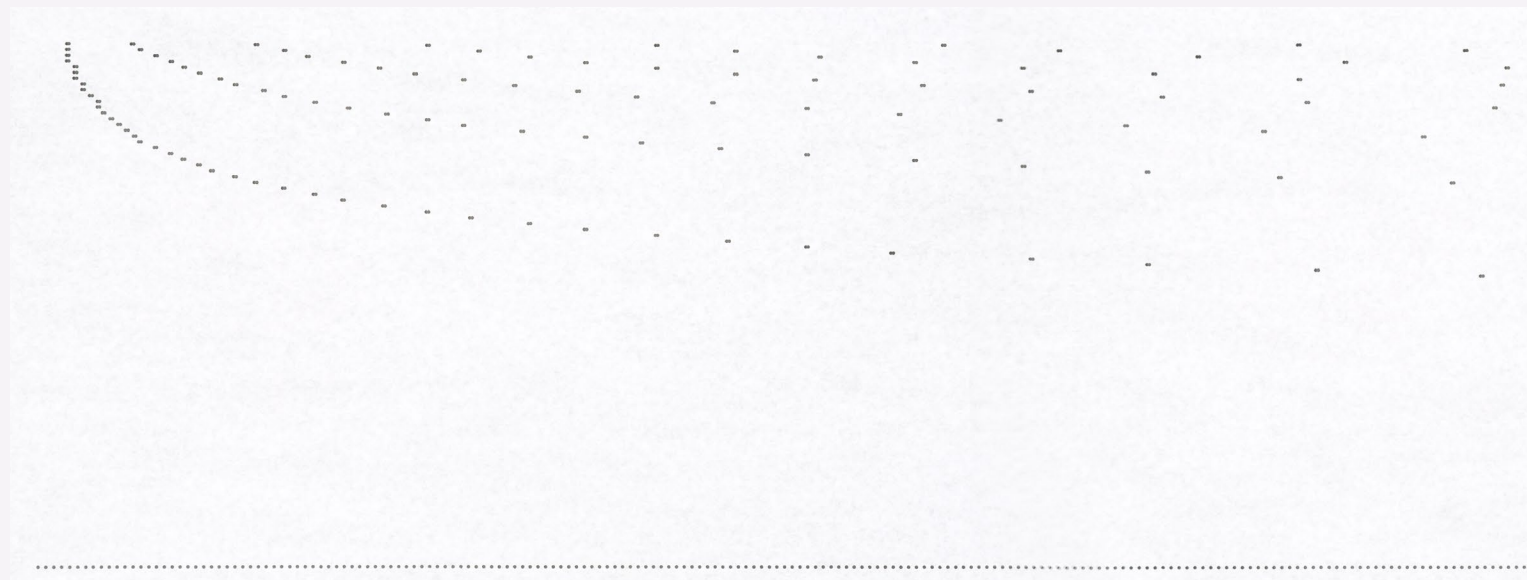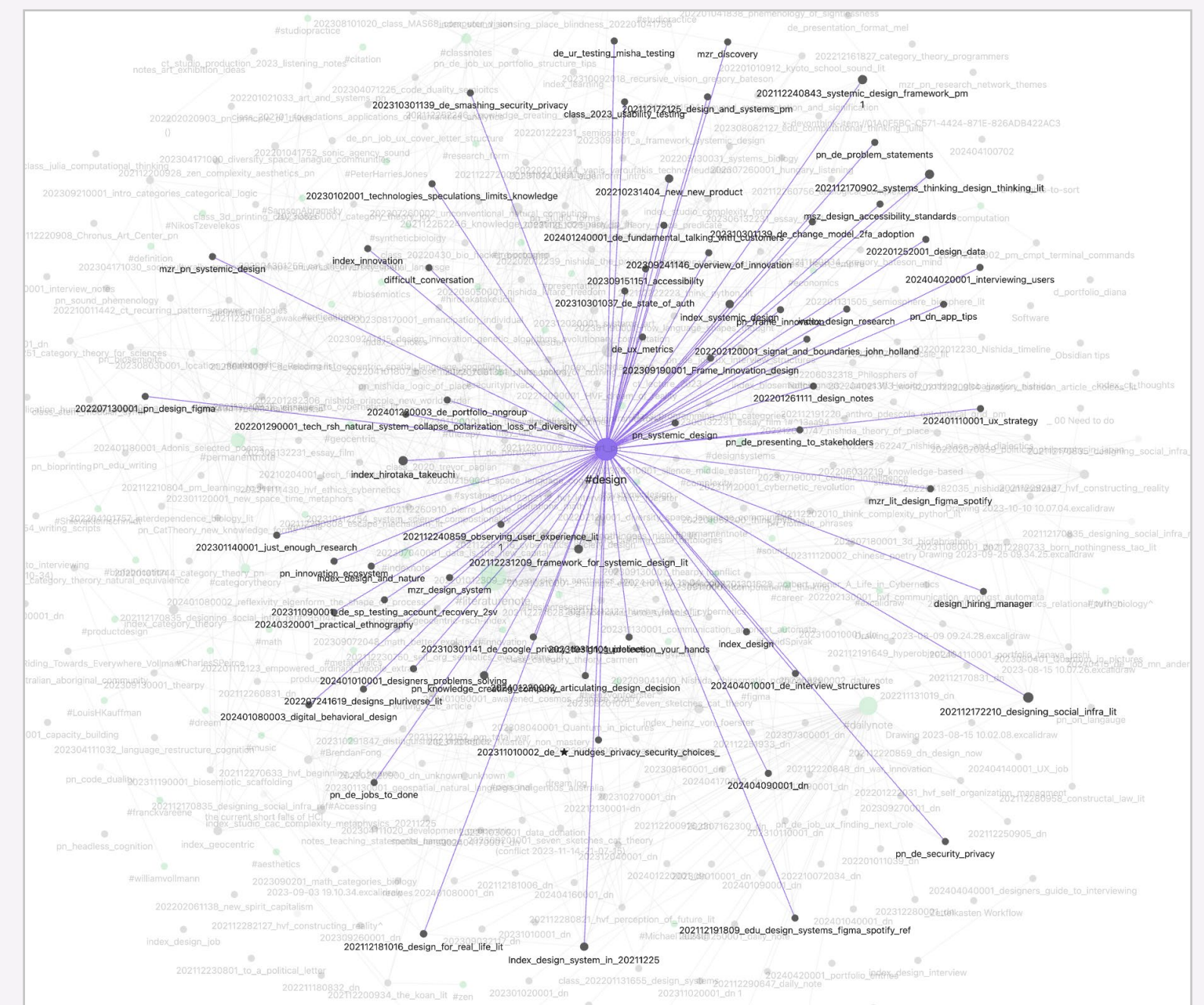
From left to right:
1. A forest garden in NYC
2. Japanese garden documentary
3. 3D audio installation
4. Piano scroll with with the first 500 years of the universe
5. A knoweldge graph of my design notes in my personal knowledge base

Principles

My design principles serve as foundational guidelines that remain constant across design frameworks, ensuring a comprehensive, adaptable, and scalable approach to the design process.

Systems thinking

Consider how each part relates to another and composes the overarching system in its environment. Holistic understanding guarantees scalable abd iterative solutions aligned with the business, markets, users' needs, and technical constraints.

Sociotechnical

Combine UX frameworks with technical parameters and computational thinking—including conditional logic and data structures—to yield better solutions and alignment between design and engineering.

Inclusive Design

Challenge biases and expand the system's boundary to encompass more variety.

Differentiation

Create distinct experiences to secure industry-leading positions

Aesthetic

Form follows function. Visual information is processed faster and stays with people longer than reading text.

When designing, I consider how my process and solutions relate to local interactions and dependencies internal and external to the business at multiple scales. This allows me to understand leverage points and create scalable solutions.

MACRO LAYER

Company
Business goals
Cross organizational partners
Cross functional partners...

MESO LAYER

Design and team org
Strategy and vision
Design principles
Design system
Technical infrastructure...

Design frameworks
& process

Research

Subject domain
knowledge...

MICRO LAYER

Design artifacts
Problem frame
Solutions...

Environment
Users' context & behavior
Market
Government regulations
Emergent technologies...

OVERVIEW

Mozilla Rally

Leading a team through an ambiguous problem space

Mozilla Rally, an early-stage start-up at Mozilla, crowdsourced users' browsing data to help academic researchers conduct scientific studies on social issues on the web, while also building an equitable market for user data. It facilitated collaboration among data contributors, researchers from institutions like Stanford and Princeton.

Challenges

Mozilla Rally was a complex data product with a two-sided (users and researchers) market in a greenfield space which yielded strategic, operational, and tactical challenges.

— Navigate an undefined space to challenge long-held assumptions and entrenched behavior around data on the Internet
— Create a new cross-browser web experience
— Create team process and design system to prototype and iterate faster
— Mature design principles and quality

Role

I was the lead and only product designer. I worked with a product manager, director, project manager, a team of engineers, a head of design, a user researcher, and data scientist.

— I developed the design culture, process, cross-team learning and working ceremonies
— I created a design system and Figma components to enable faster iteration and prototyping within a lean-agile process.
— Developed hypothesis-driven approaches, faster iteration and prototyping; data-driven decision making

Task

Create new cross-browser web platform where people can contribute their data to researchers and journalists and have an impact on societal issues that begin on the Internet

— Create account settings and security flows
— Improve onboarding and study enrollment
— Create scalable data collection and governance model
— Create MVP product value for end users

Impact

— Increased the number of users who completed account creation and went on to sign up for a study (user activation rate) by 7.8%.
— New registration flow had 24.3% increase in completion
— New design processes and components shortened engineering hand off and design QA
— Created unprecedented data sets for research, which led to shaping data policy and reporting in major new coverage, including The Markup, The Atlantic, Fast Company, Engadget, and Gizmodo
— Deliver value to end users: their contributed data led directly to societal impact

Mozilla Rally
Leading strategy and alignment

Addressing complexity and caused by varied consent requirements and new data objects

Rally made changes to how data was collected and began accepting studies with varying legal consent requirements, which our existing designs did not support. The new combination of users' initial consent, different legal requirements for studies, and users' ongoing choices created ambiguity on how to proceed.

When a plan was shared with our engineers, they requested clarity on how the logic of the new system would work.

Modeling the states of the new system to drive decision and team alignment

After gathering requirements from engineers, I crafted a decision map delineating the correlation between users' choices and required consent. I used John H. Holland's model of data gates and states to create a map delineating 23 potential states based on users' decisions, opt-in prerequisites, and their eligibility for studies. Insights garnered from this map guided us in pinpointing instances needing additional user consent.

To balance automation and user agency, I introduced the concept of global preferences, enabling users to opt in automatically or receive notifications about recommended studies per their settings. This diagram aligned the team on what actions to avoid, removing any information regarding studies, and provided two new data governance and consent concepts to test.
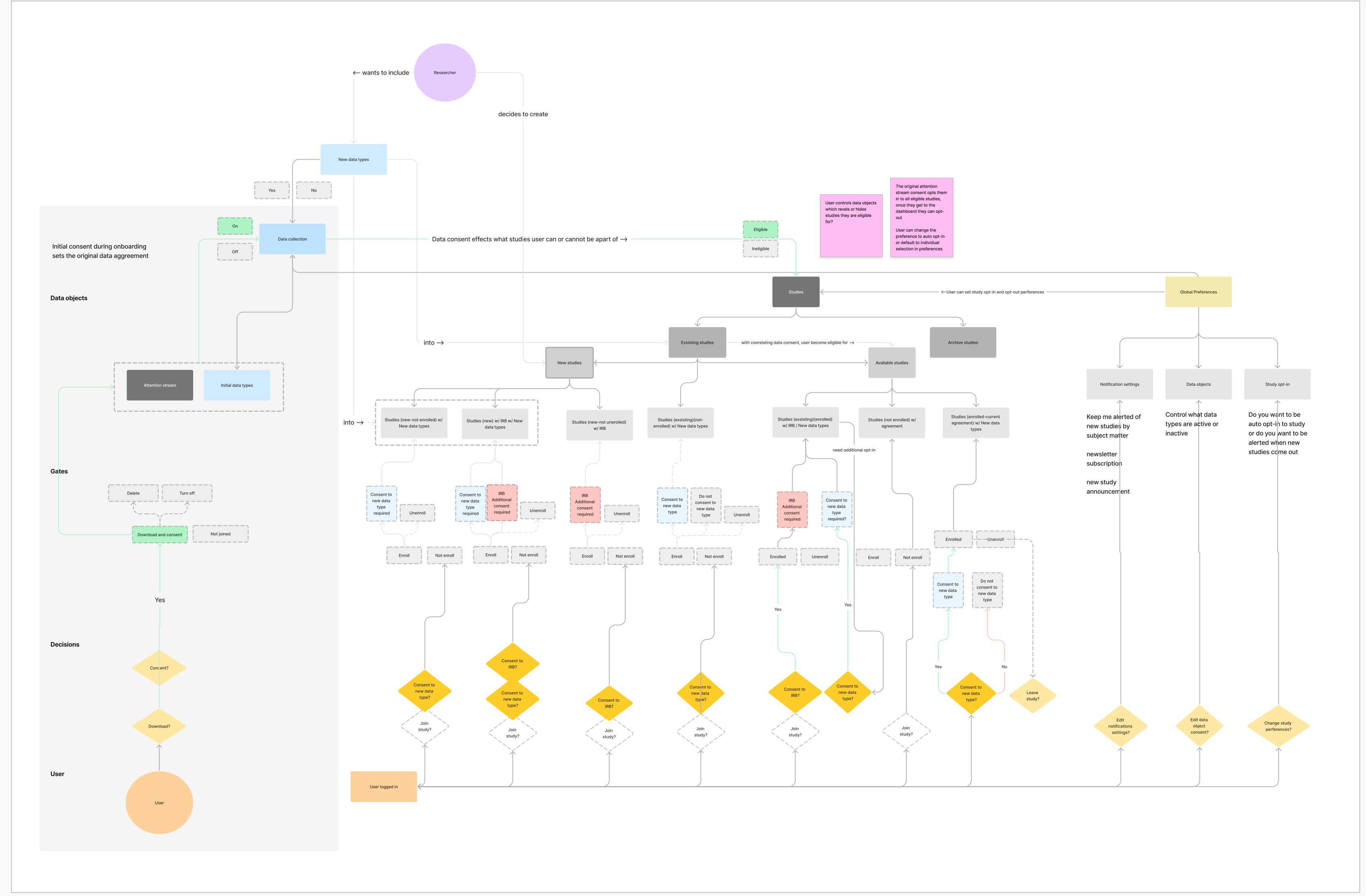
Mozilla Rally
Leading strategy and alignment

Transitioning from legacy design

When I started, I was tasked with finishing flows planned in the last quarter. I was responsible for creating a completely new end-to-end cross-browser experience, starting with the account settings, sign up, and sign in flows.

The existing design system and UI kit contained non-standardized components with missing states that could not be universally changed. Design patterns were inconsistent and sometimes created one-off instances.

Tactical and strategic approach to lean-agile design

Because I was the only designer, I created responsive auto layout components with modular parts, states, and content types. I could easily update content, states, swap out parts, and make universal changes that affect all components at once to save time. I built a new design system aligned with engineers production process and following accessibility practices, resulting in quicker hand-off and development. This enabled the team to iterate and experiment quickly within a lean agile process.

Working closely with the engineer I was able to help them improve their standards for design quality, which drastically shortened QA time.
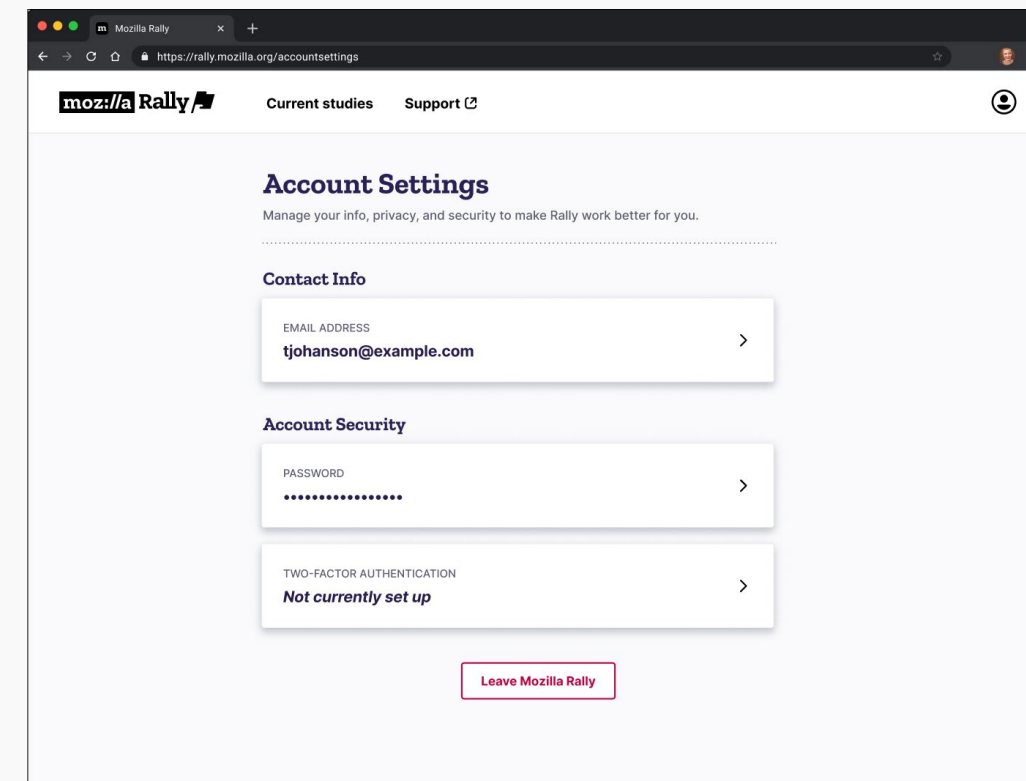
The previous designs for account setting is an example of a one-off design pattern. There is a different design for an account made through Google social login and email/ password.
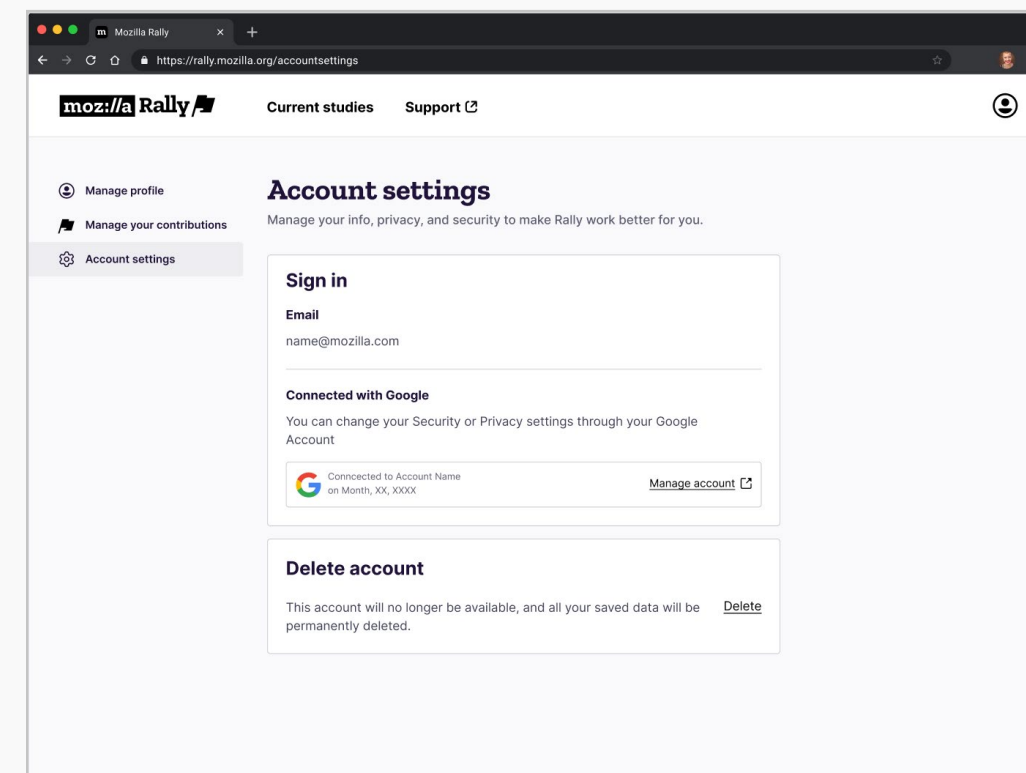
My design approach was to leave out one-off patterns and only include scalable and modular patterns. Within one design, Google SSO and email/password were compatible.
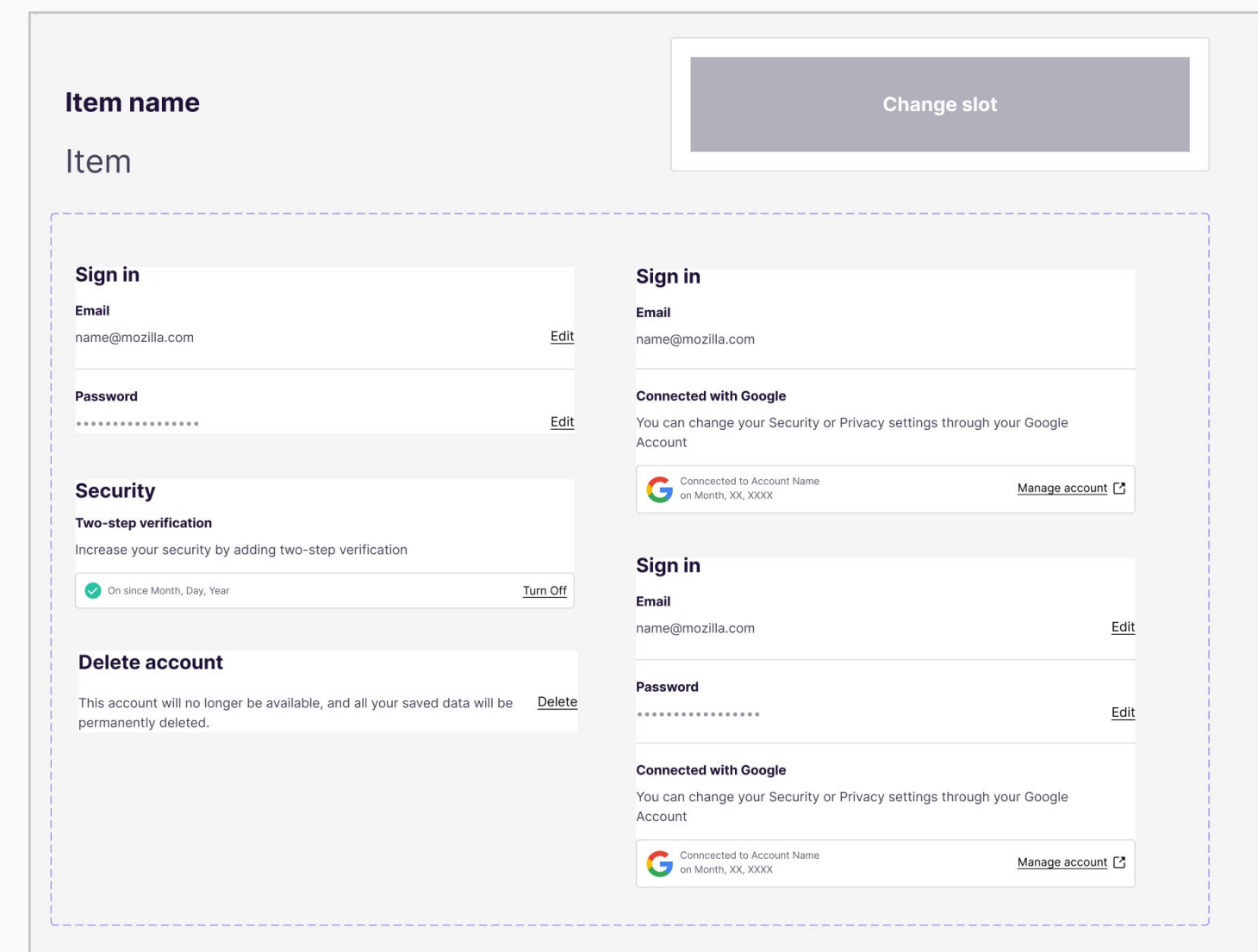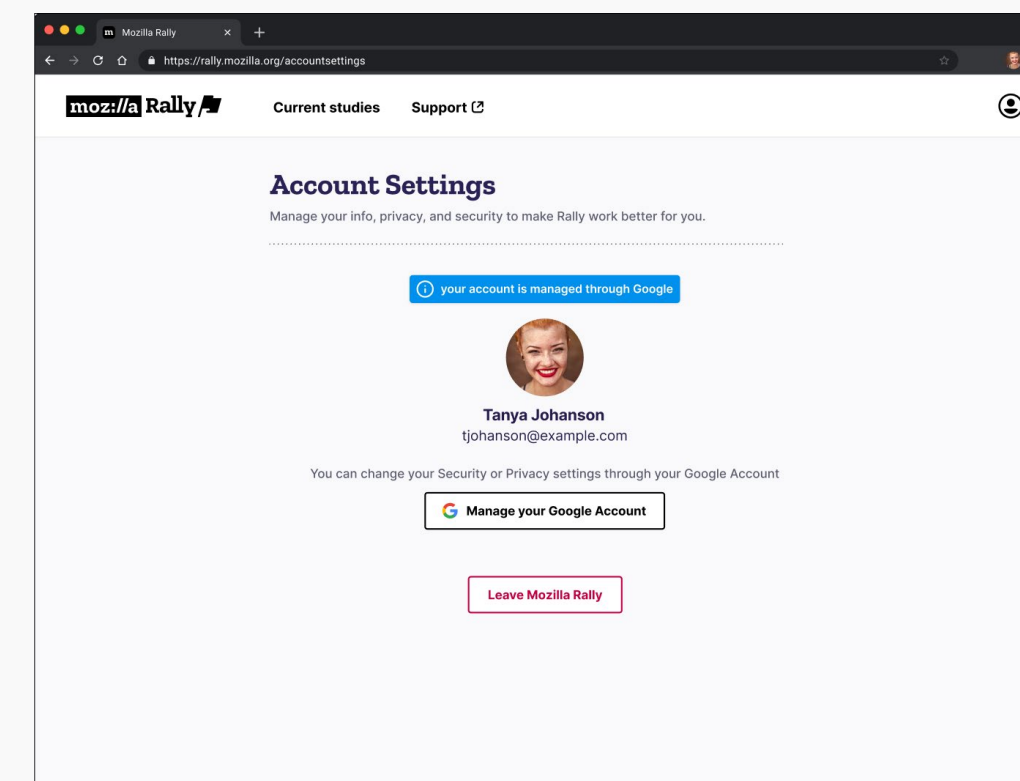
NOTE
Component architecture

The components follow a nested architecture. Base components are elements that appear systemically.

Systemic changes should be made at the base level.*

*Only "complex" components use base

Component naming convention

.swap[Name]: denotes a set of icons which can be slotted into a component usually .base

.base[Name]: Systemic styles of element per component. Including:

- typography
- layout

.base makes a component and their variables

variables are different states of a component

Content: Copy changes go here. Content is slotted into the container.

Container: Elements usually feed into a container, like a card that hold all the elements to create component

Template: Group of containers relative to a page

Nesting structure

- Templates
  - Container
    - Content
      - Variables of component
        - .base component
          - .swap icons

Mozilla Rally

Leading strategy and alignment

Creating a North star and key differentiators with behavioral branding

Rally had outgrown its data donation model. We needed a data governance model that could scale with us. To align the team I created a North star and key differentiators to remind us of our mission and unique place in the market.

Using a behavioral branding approach I learned from digital agency Area 17, I hosted a strategic workshop with Rally's director to document and evaluate audience segmentation, user research on value, competitive analysis, existing brand identity, and digital strategy. I then distilled resulting key insights into value propositions, defining what we represent, our objectives, and our past successes.

Additionally, I pinpointed our primary points of differentiation, ensuring clarity in our positioning. This collaborative effort enhanced our strategic direction and solidified the team's understanding of our unique place in the market.

Values
Attract our users

— We empower collectively minded people who are dissatisfied with the state of the Internet to make it better
— Users can learn about themselves (and how they relate to their community and demographic)
— Nowhere else can you contribute data and see these types of out comes

Promise
Our actions on behalf of our users

— We are more collective and community-minded than competitors like Yougov
— We adhere to lean data practice
— We operate with Mozilla's value
— We are doing something to make the Internet safecomes

Impact
What we deliver to our users

— Through uniting our partners and users we were able to impact issues around privacy and the Internet in a way no one else can and has never seen before

Focusing on impact reports and insights from community data

We needed to communicate the impact of taking part in a study quickly to keep users engaged. To deliver value to study participants, I led a multi-stakeholder workshop on delivering tangible value to our users. It resulted in several ideas that we concept-tested with users. From the research, it became clear that being part of a community and having an actual impact on the Internet was very important to our audience. We went with the data visualization from the Rally community and an impact report derived from their data contributions. UR tested it and got a green light for comprehensionnsion and excitement.
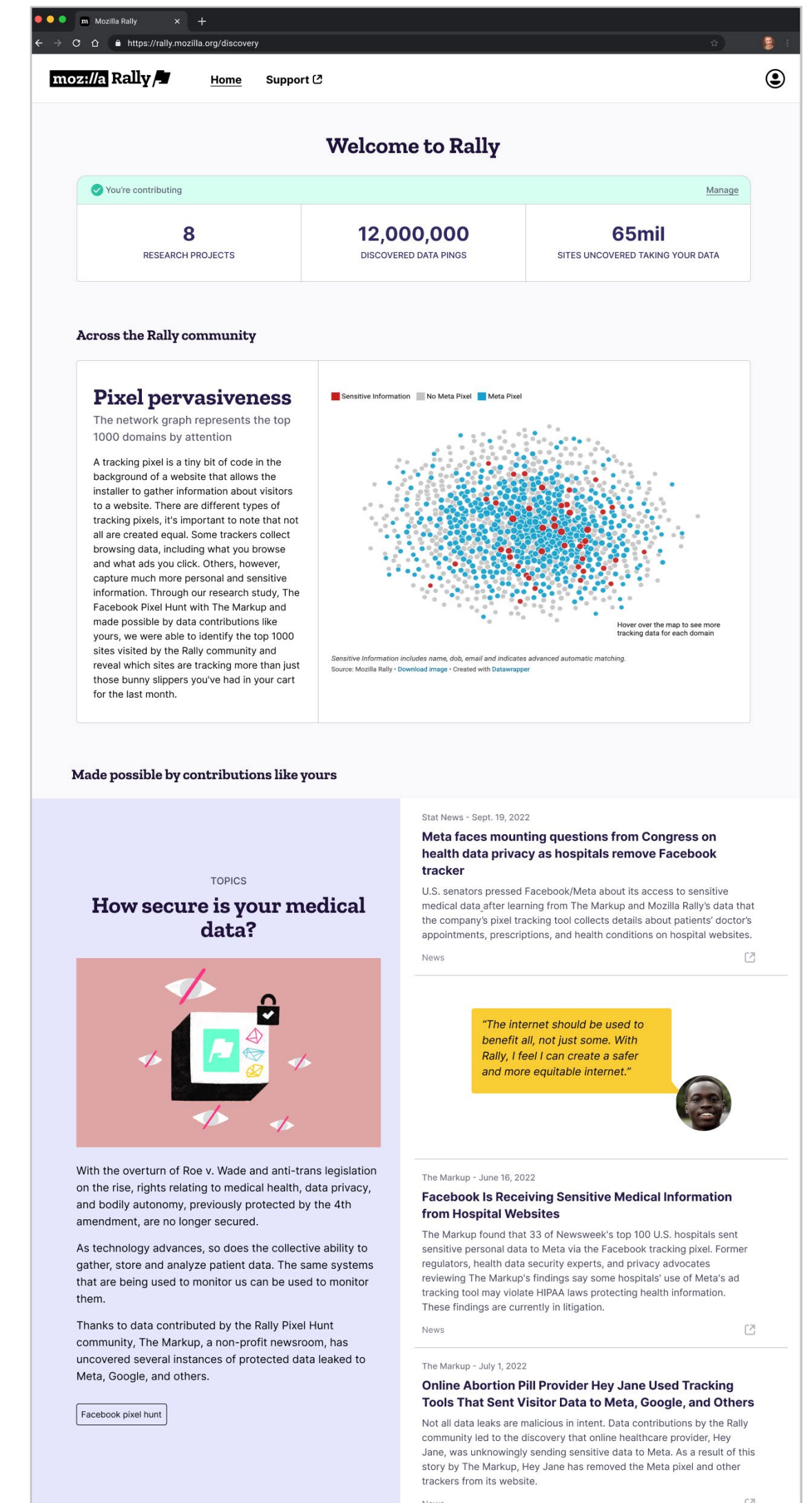
Mozilla Rally
Activation and onboarding

Improving study enrollment drop off

Usability issues on the previous web platform resulted in a 50% drop-off rate in users who completed the final step of enrolling in a study after creating an account and downloading Rally's browser extension.

Collaborating with product, research, data science, and engineering teams, we conducted a cross-functional workshop to brainstorm MVP and ideal state solutions for each phase of the registration and study sign up user flow. Our hypothesis suggested that users were unaware of the need to sign up for a study upon reaching the logged-in landing page, which we prioritized based on potential impact.
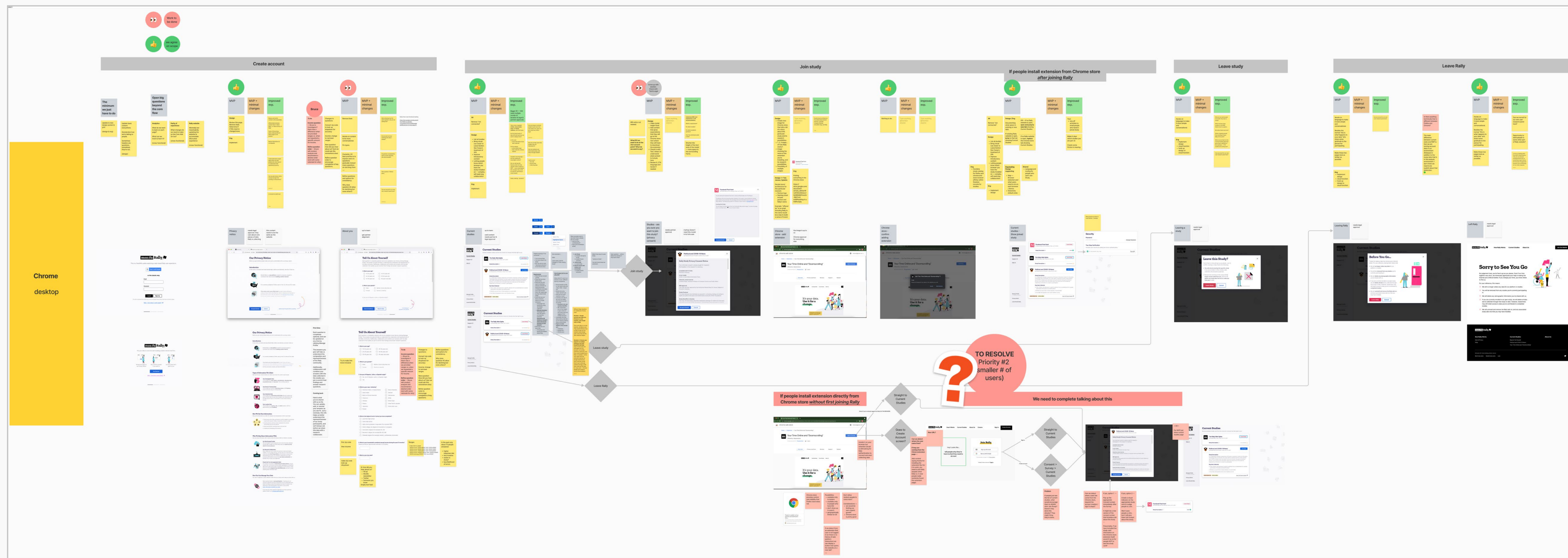
Focus on contextual learning and status cues to improve user activation

I revamped the onboarding experience by removing the instruction list at the beginning of registration and separating it into individual steps that accompanied each action users had to take. I also added contextual information for joining studies to make users aware each study was a different extension.

A status bar now indicates whether users have joined or left a study, enhancing clarity. Responding to user feedback, I introduced the option to retract consent, allowing users to pause contributions instead of leaving a study entirely. These changes led to a 7.8% increase in study sign-ups. For future iterations, I planned to create a more value-driven onboarding experience with contextual guidance.
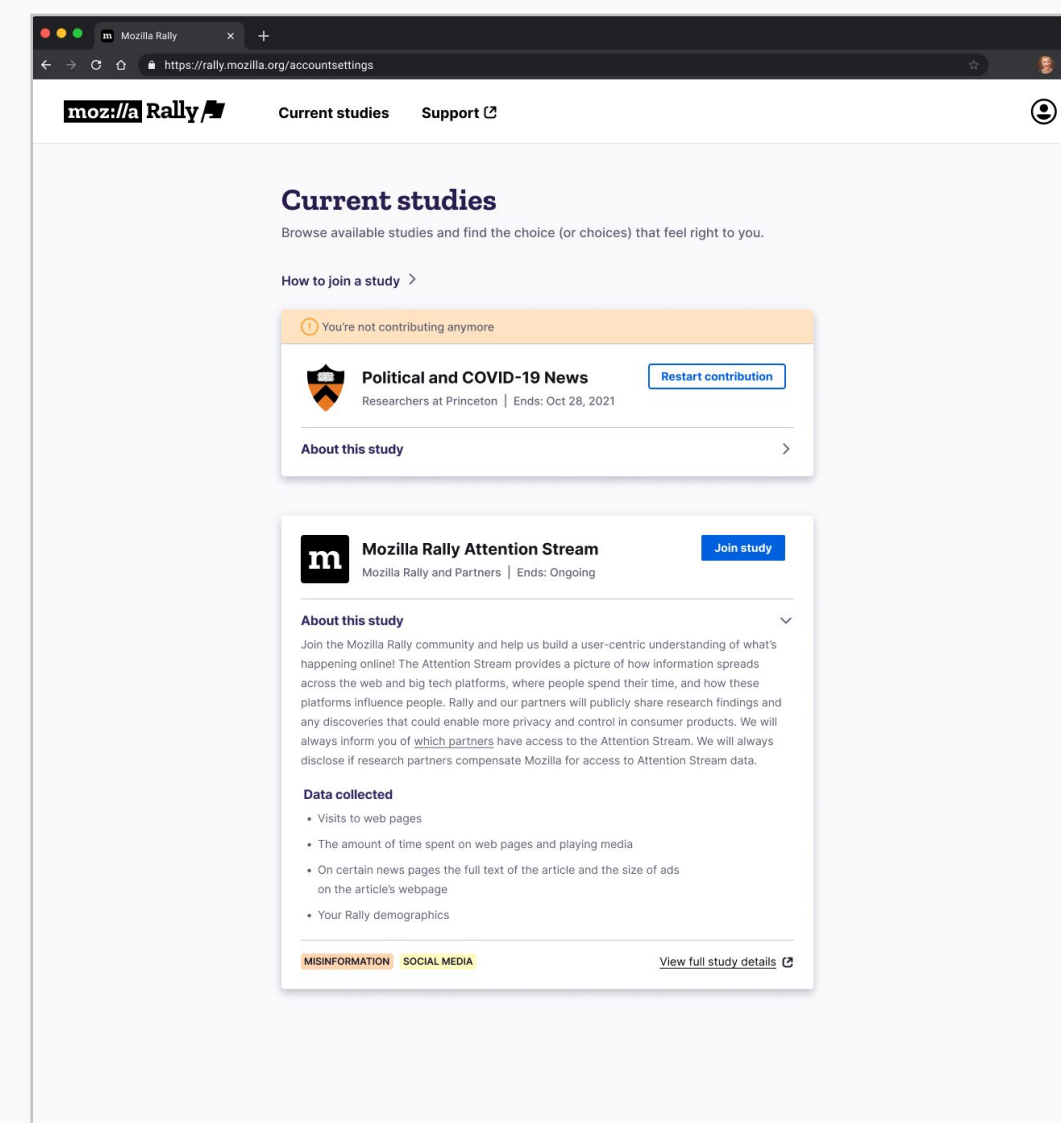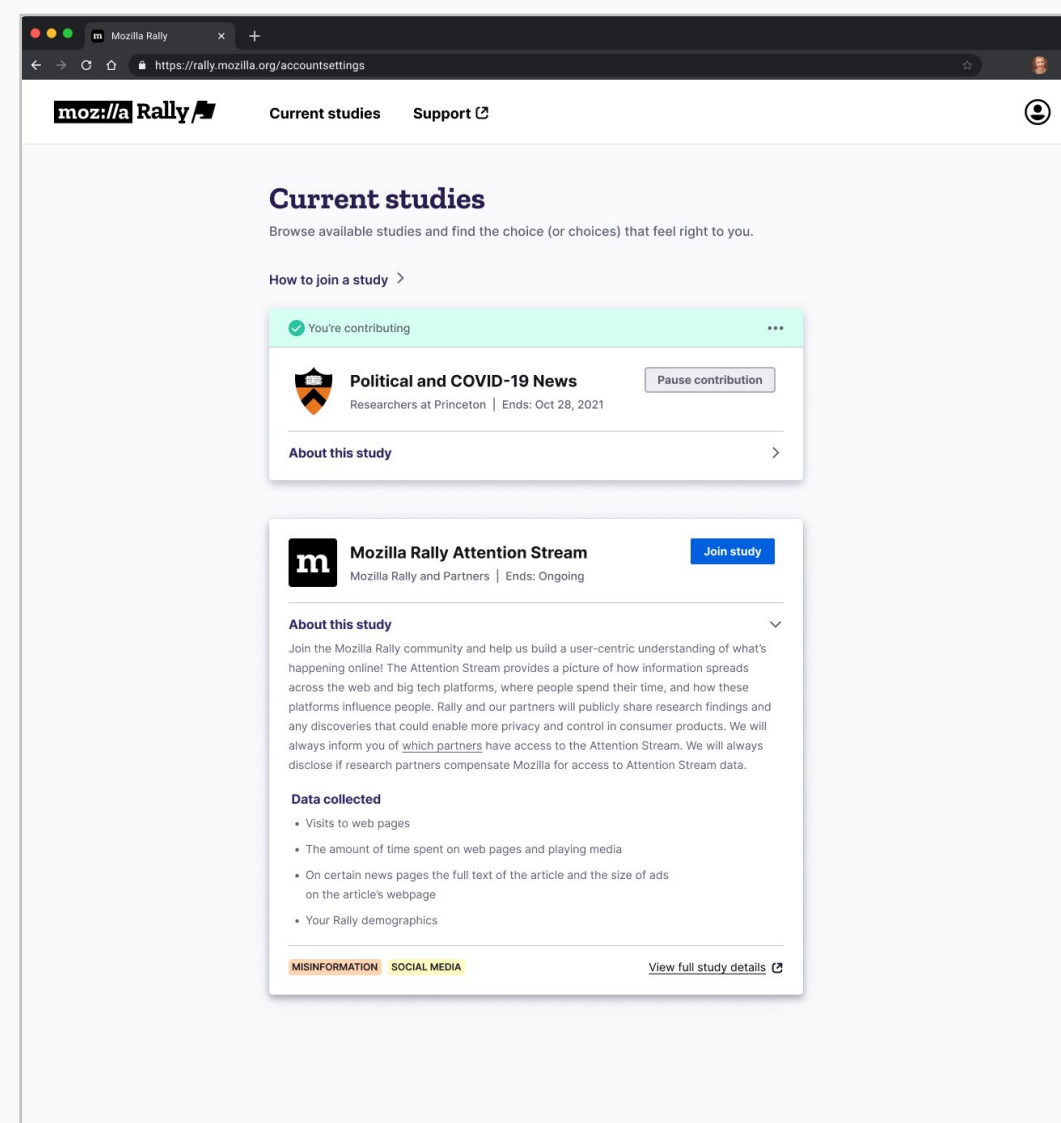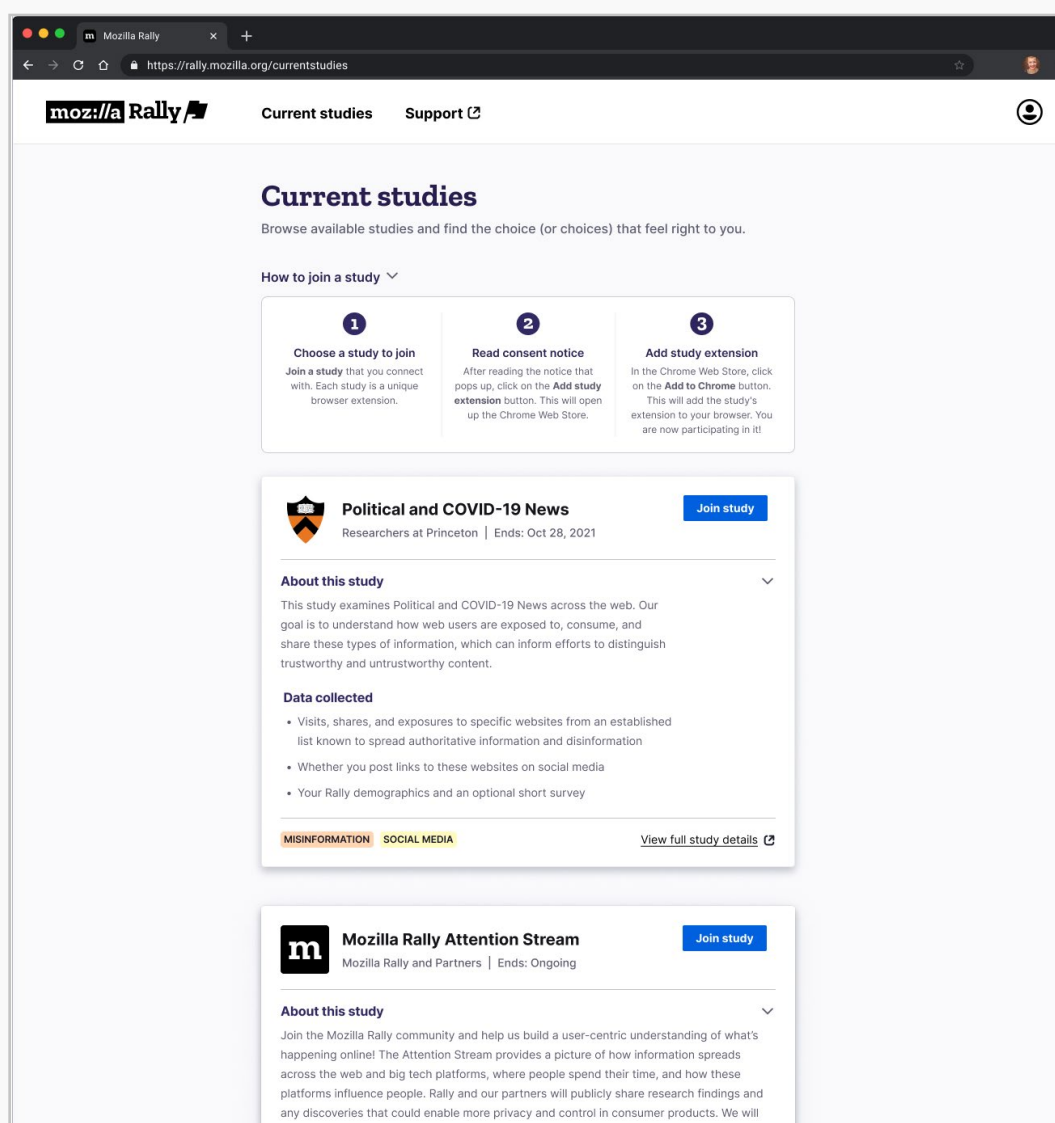
OVERVIEW

Mozilla Accounts

Establishing design process and strategy
Reducing friction and finding user value

Mozilla wanted to turn accounts into a central hub for its growing suite of products. I was the UX lead for the Mozilla accounts team, helping to establish the new accounts and product ecosystem. Mozilla aimed to transform accounts into the gateway for accessing a range of Mozilla services and products, providing users with a centralized identity and login mechanism across Mozilla's growing product ecosystem.

Role

I was the lead designer. I worked with a product manager, a technical project manager, and a team of engineers. On the UX team, I had a part-time junior and senior designer, a content designer, and a researcher.

Challenges

— Mozilla accounts was an engineering lead team with no design process and not much experience working with designers
— There was UX debt causing friction across the whole experience
— The business wanted to transform accounts into a central authentication method for Mozilla's growing family of products and services.

Task

— Identify and reduce friction across the entire experience: registration, authentication, security management, account service and product integration
— Find and demonstrate value
— Develop the Mozilla account and the product ecosystem

Impact

— Established cross-functional and design processes to increase work quality and speed of deployment
— Changed entrenched thinking on users behavioral models to reduce cognitive load for users
— Reducing friction across the accounts ecosystem: SSO increase login by 30%, completion of account recovery key increased by 50%, 2FA support tickets decrease by 60%

One login.
Everything
Mozilla.

moz://a

Mozilla Accounts
Leading strategy and planning

Leading senior strategy workshop to plan for the year ahead.

After leading the accounts team for a year, the lead PM and I believed we needed gave us short-term solutions that didn't resolve root problems.

I created a new design framework and ran a workshop to expand our working frames

I led the design of a one-year product vision and UX initiatives to give us the perspective we need-ed to deliver on and exceed customer expecta-tions and align on potential markets and audience segmentation.

I planned a 2-day workshop involving the lead product manager with senior UX and content de-signers, engineers, and researcher. Instead of us-ing the trusty double diamond method, I created a framework combining the iceberg and frame innovation model to:

— Fundamentally expand the problem and solu-tion space

— Self-reflect on our company and org-level cul-ture and frames

— Bring clarity to possible audience segmenta-tion and markets

— Create deep empathy for our users and their

underlying motivations

I started the workshop by grounding it in the PM-created goals. I asked participants to share the user pain points they've observed from their experience and learned from the research.

I then created space for us to reflect on Mozilla's value, mission, and position in the industry and market trends. I expanded the conversation to consider our targeted market, future users, and government regulation. We discussed how points in this layer related to the themes we previously detected. After discussions I categorized the par-ticipants' contributions into four areas.

In preparation for the following day, I collaborated with UR to compile relevant research materials, in-cluding personas and user quotes directly related to the team's discussions.

In the next phase of the workshop, I facilitated the discussion of the patterns. We arrived at the deeper themes detected in the user research that united the current and future audience segments. This helped us build empathy for our current and future customers. We then discussed how these deeper user motivations related to Mozilla's value, mission, and position in a changing industry.

OUTER RELATION AND INFLUENCES

Observable events
What we are trying to solve for

Themes from patterns
What trends have been happening across the experience

CORE RELATION AND INFLUENCES

Underlying Structures and context
Key stakeholders and structures that creates and reinforces the patterns

Users and their mental models within an expanded field
Key users actively or passively within a broader societal field—including anyone (potential or influential segment) who might be connected to the problem or the solution at some point in time

Deeper drivers, motivations, beliefs, and issues
The deeper, universal values that will inform the formulation of theme.

Seeing the limitations of a double diamond model for our needs, I created a framework combining the Iceberg and Frame Innovation model

Mozilla Accounts
Leading strategy and planning

Arriving at team alignment and ephinanies

After leading a senior-level cross-functional work-shop we arrived at a shared understanding of:

— our fundamental technical limitations and the opportunities within them

— our users' deep motivators and if our position in the market and industry were addressing or hindering our users' needs

— where major leverage points were to effect changes we wanted to see in the experience

Turn challenges into UX Initiatives with immediate tasks we can do today and future tasks with bigger pays-offs

I used insights from the workshop as prioritization principles that helped us move from a short-term roadmap driven by narrow problem frames to an opinionated, multi-year outlook.

I created a list of UX initiatives based on my meta-analysis report and insights from the workshop. I linked the initiatives to the PM's OKR and KPI. I worked with the PM and director of engineering to prioritize each piece.

UX Intatives list

UX Intiatives details

2FA lockout

Known issues: The current 2FA solution via the Auth app theoretically has redundancy built in because of passcodes, but in real-life scenarios, the solution behaves as a single point of failure due to the frequency of people losing their passcodes. Please note that 2FA is a required step for add-on developers.

The 2FA lockout has led to the highest number of SUMO tickets in 2023. Some of these users were confused that password reset with a recovery key did not alleviate their 2FA lockout.[5] In a survey done in 2019, 67.6% lost access to their authenticator app from either losing or restoring their device. 39.9% did not save their backup codes, and 28% saved their codes but misplaced them.[6] Currently, after account lockout, users will contact support and are advised to go to their logged-in account on the other device (a multi-device user) and then disable 2FA. However, this solution is ineffective and often does not resolve the issue. *Without industry-standard technical solutions, like storing your passcodes in FxA Servers, Trusted devices, or Passkey, we can create a proof of ownership flow.*[7]

Technical constraints: Our current 2FA solution, the Authenticator app, is device-bound, and the passcode is locally stored by default.

Tasks:

- Immediate: Redesign 2FA lockout flow
  - 1) Identify a combination of "proof of ownership" to allow for recovery after the 2FA lockout and 2) streamline the process with a flow. Some of the most popular ways to prove identity are:
    - Personal information, such as name or address.
    - Uploading an identity document.
    - Basic account information, such as the username or payment details.
    - Extended account information, such as information about the last purchase or the date the account was created
    - There need to access the email address used to set up the account.[8]
  - Work to identify if we should remove the 2FA layer during password reset with a recovery key
- Future: Non-device bound solution

_____
[5] RFC - Trusted Devices for Account Recovery
[6] Firefox Accounts Two Factor Authentication Lockout 2019 Survey with Sections
[7] Since one time codes in Authenticator were only stored on a single device, a loss of that device meant that users lost their ability to sign in to any service on which they'd set up 2FA using Authenticator. With this update we're rolling out a solution to this problem, making one time codes more durable by storing them safely in users' Google Account Google Authenticator now supports Google Account synchronization
[8] Adventures in Recovery Land: Testing the Account Recovery of Popular Websites When the Second Factor is Lost

Mozilla Accounts

Leading strategy and planning

Design principles leads to massive cultural shift

Entrenched thinking was causing our users' information overload

After a year at Mozilla, I noticed we culturally operated with the model of a "user" as an entirely rational decision-maker. It resulted in employees defaulting to offering users as much information as possible, believing it enabled the user to make the most informed decision. However, according to UR, it often resulted in decision paralysis and cognitive overload.

Combing insights from the latest academic and industry research with our workshop insights

In my free time, I completed a literature review of the latest studies on adopting security and privacy practices.

I formulated design principles by integrating the findings from the literature review, a comprehensive exploration of the latest studies on adopting security and privacy practices, and the insights from the senior strategy workshop. These principles were then disseminated among the team, ensuring a well-informed and strategic approach to our work.

Princples lead to a massive cultural shift

Incorporating the design principles in the work change account team consensus—including engineers who have been at Mozilla for 10+ years—shifted away from defaulting to decisions that overwhelmed users with information at all costs to a more gradual approach, considering multiple touchpoints and meeting users where they were.

Design for the critical user journey

Account security and privacy actions are not the users' primary focus. Respect user choice. Design steps are anchored by the primary task while utilizing framing effects, personalization, and just-in-time notices.

Multiple touchpoints and a gradual process to change

Our users (in the United States) need to be guided through a gradual process from discovery (pre-contemplation), awareness, consideration, action, and maintenance.

Make relative nudges proportional to benefit

A nudge's direction, salience, and firmness should be proportional to the user's benefit from the suggested course of action or risk from lack of action.

Be situational, not just transparent

Offer just enough information relative to the users' security and privacy journey. Implement telemetry to increase personalization, better target user needs, and improve communication throughout their experience.

Mars' Business Recovery Management platform (BRM)

An internal tool and risk management platform

Mars, Inc's global workforce boasts 130,000 employees in over 70 countries, and annual revenue is 35 billion dollars. Mars has a diverse portfolio, from M&M candies to pet care products. The BRM program is a 1-year training program to prepare employees to secure Mars' assets from various risks, and help them plan for the most likely threats in their regions.

Challenges

Mars' Business Recovery Management (BRM) team required two consultants to travel to sites around the world to facilitate gamified resilience workshops. They wanted to digitize these to reduce the cost and effort of coordinating travel, and ensure easy access to important information like plans and site contacts.

Role

I was the sole UX designer and researcher on a team of business consultants, engineers, and a product manager.

— Led research at every stage of the design process
— Continuously aligned with the BRM team
— Redesigned internal tools
— Managed a team of freelance front-end engineers

Task

Develop a new self-service digital platform for training Mars' employees to identify production vulnerabilities, understand their impact, and propose solutions during a year-long program.

Impact

— Increased site enrollment by 2x Web traffic increased by more than 125%.
— Reduced the annual run cost of the program from 4 to 1.8 million dollars.
— Lowered Mars' annual insurance fee
— Received renewed contract with an expansion of scope for an enhanced version of the platform that aligned with users' mental models and use cases

Mars BRM

Gathering insights and streamlining processes

Gathering information and insights

I conducted interviews and process audits with the consultants, identifying existing pain points and the critical data that needed to be captured. From here, I created user journeys.

The platform was full of free text fields, so searching across the site was impossible. We standardized the data fields to reduce the number of free-text input fields and removed redundancies. I worked with the PM, stakeholders, and a data scientist to create a normalized list based on functions and equipment for consistency.

Uncovering painpoints

I conducted interviews and contextual inquiry on site, and found that users saw the training as a burden as it took time away from their primary responsibilities. Additionally, management did not recognize the work staff did during training, which lowered motivation to complete tasks.

I facilitated ideation workshops with the program directors and the key stakeholders who oversaw the global sites. Having a consistent touchpoint and being able to show them continuous research and iterations, I aligned staff's points of view with that of the program stakeholders.

I also created a site map, sketches, wireframes, high-fidelity wires, and design systems.
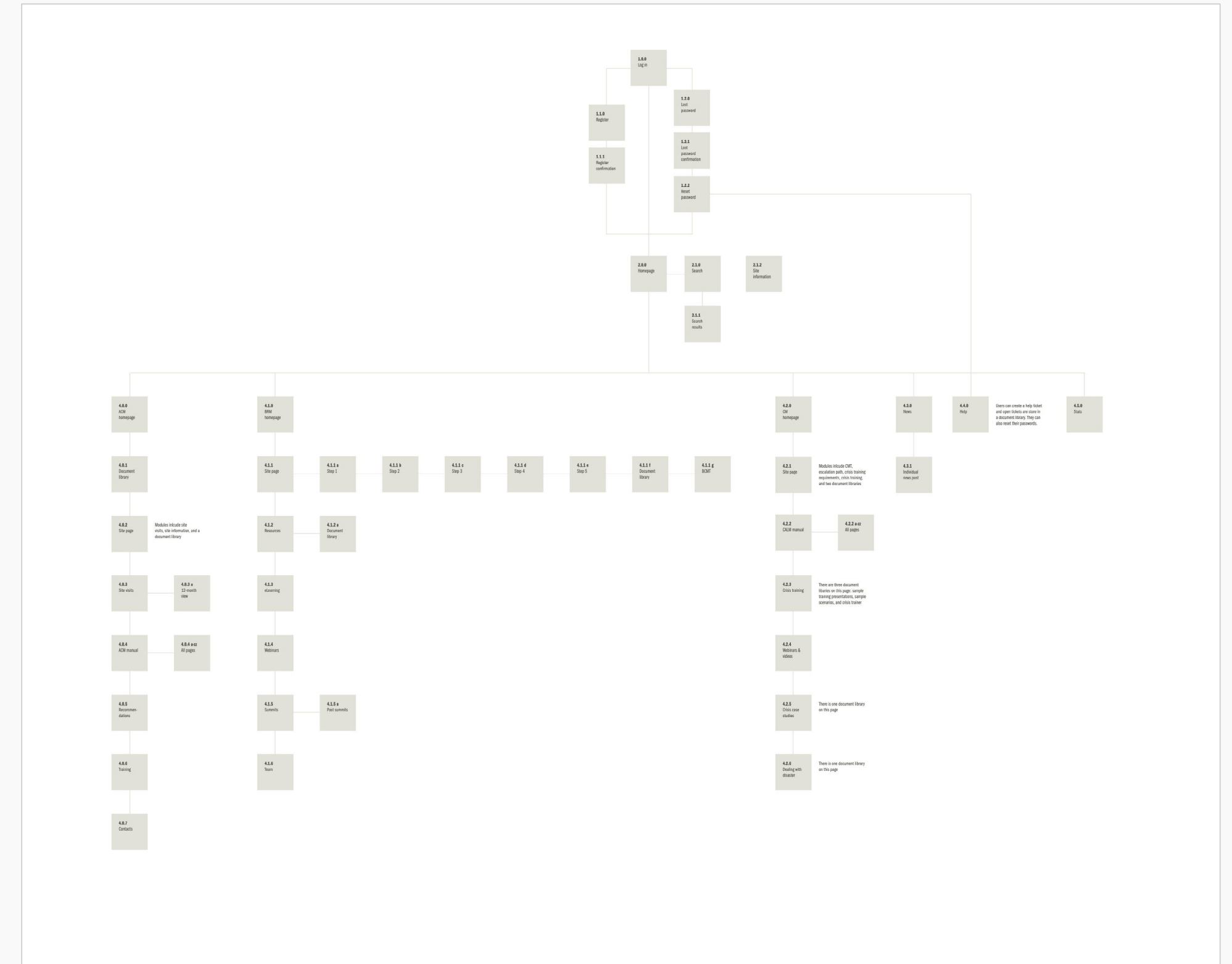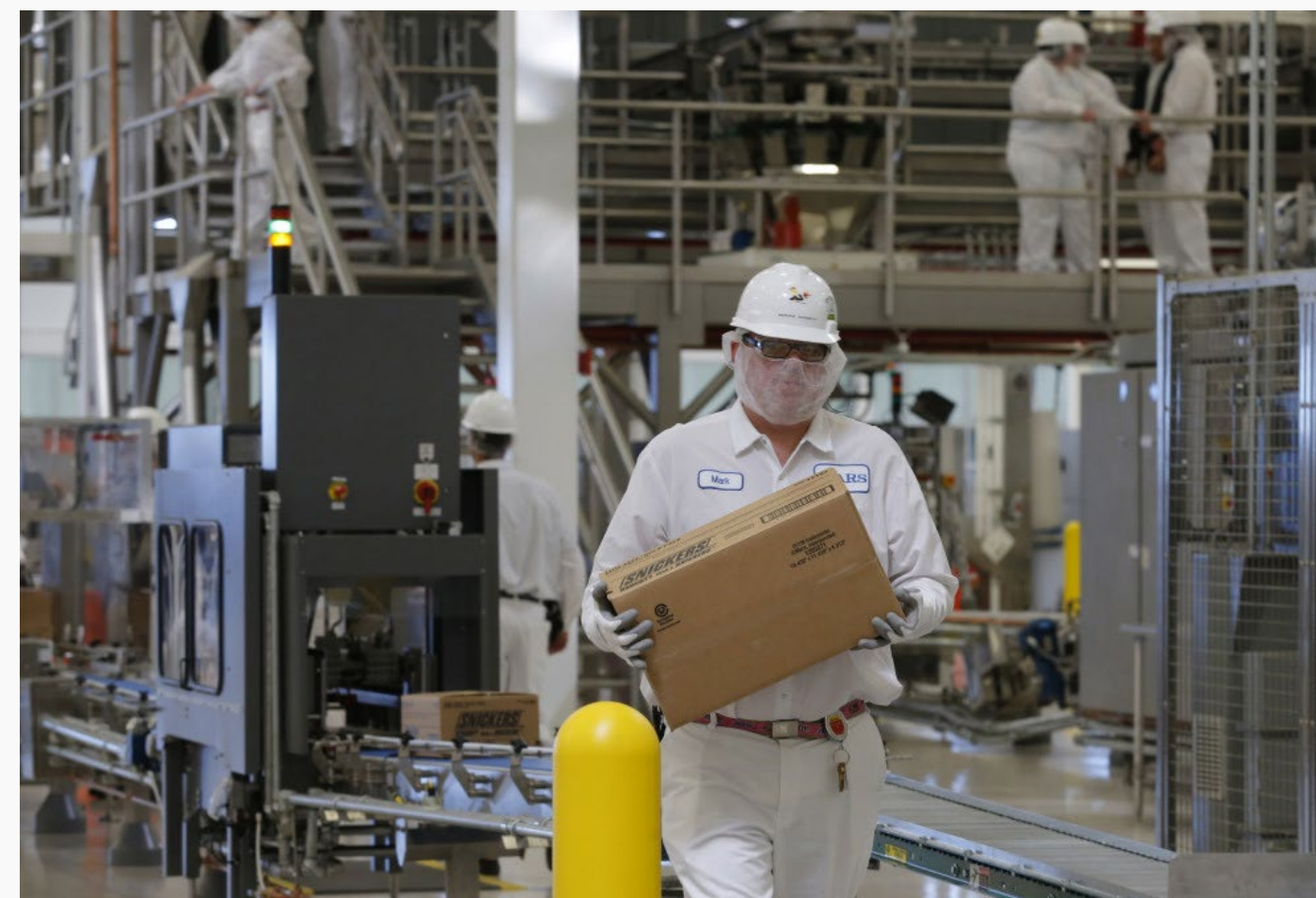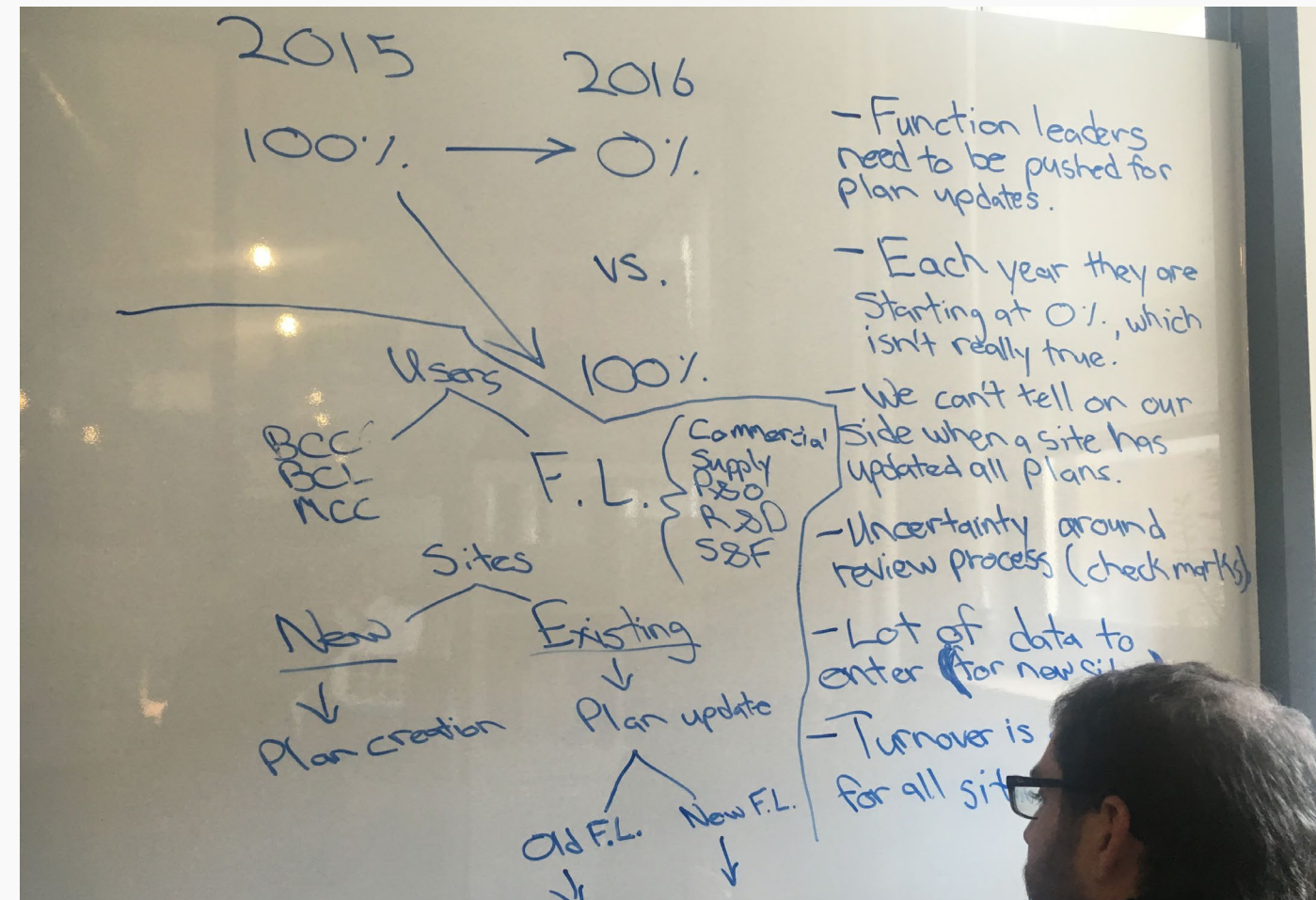
Mars BRM

Increasing engagement and enrollment

Enhance interactivity and progress cues leads to more engagement

I moved away from the data entry look-and-feel of the previous solution and aligned with Mars' product branding and interactivity of the in-person gamified workshop.

I created a platform that consisted of a learning program and planning tool with progress status and notifications based around sites, with incentivization, to make the program more self-sufficient.

Boosting user motivation

Employees were proud of their site, team, and products. Acknowledging this, we anchored the BRM program to site-specific dashboards with progress status, notifications, and automated email reminders and campaigns

Working with the PM and stakeholders we decided to create a new step adding visibility to the end-users' work, deepening engagement.

The redesign increase site enrollment by 2x; web traffic increased by more than 125%.
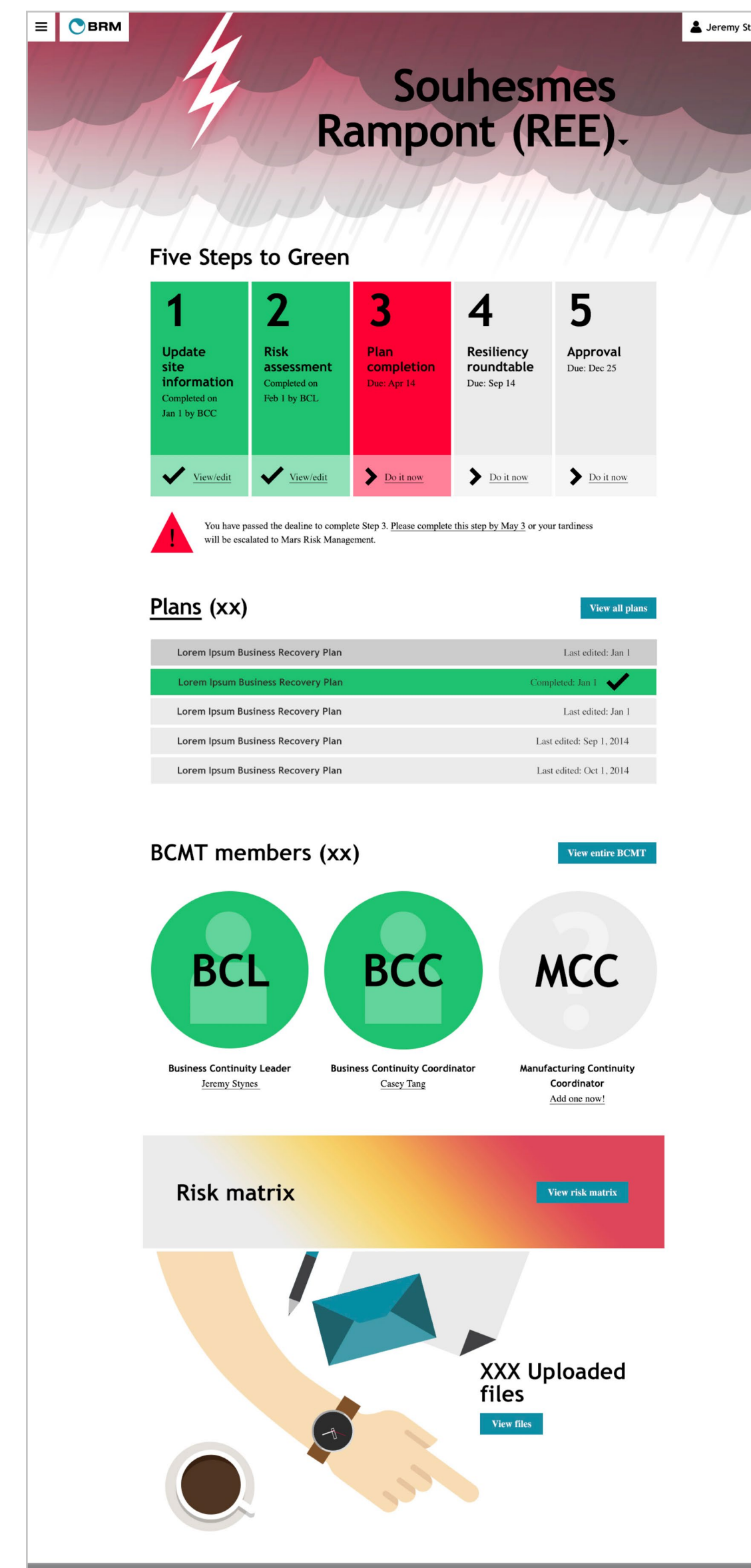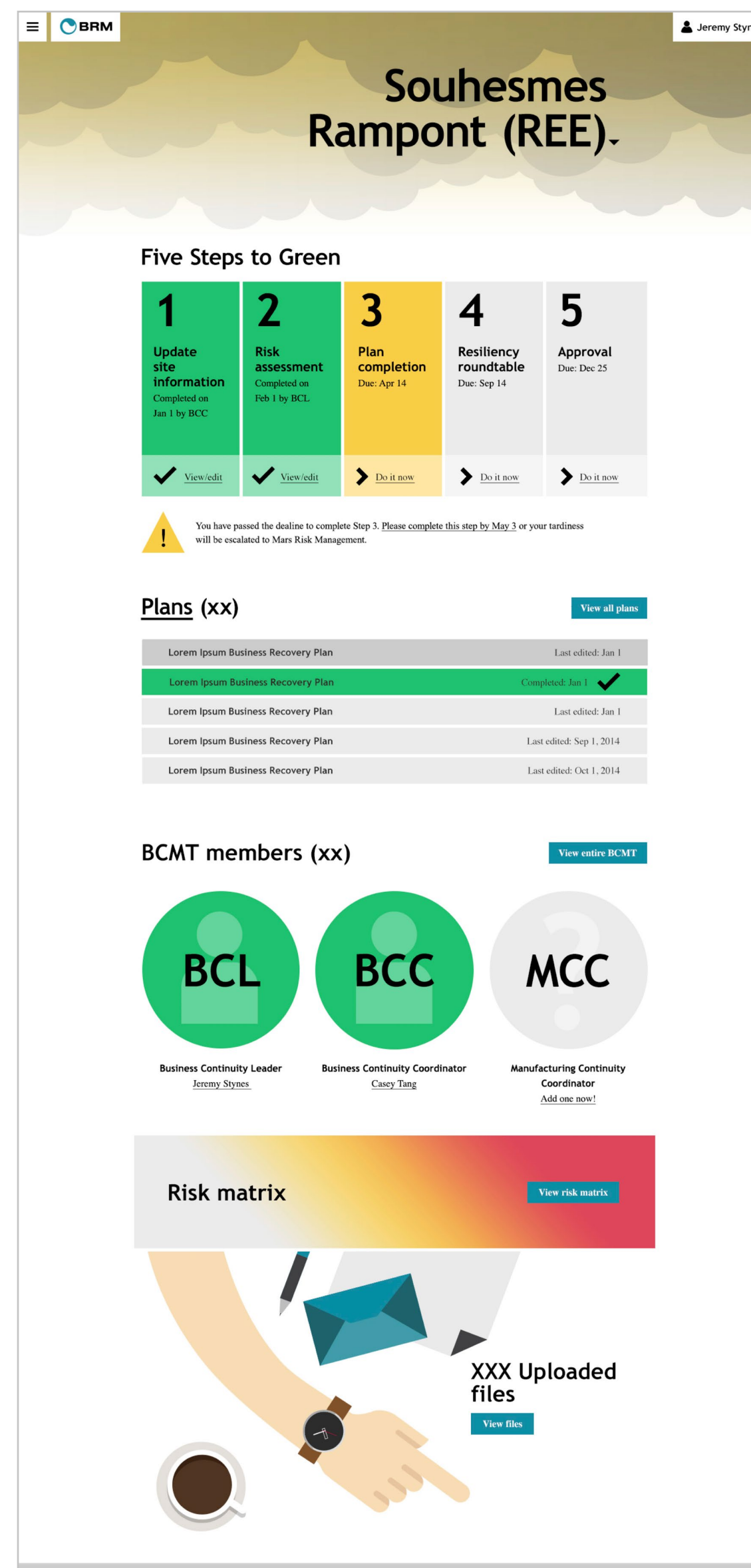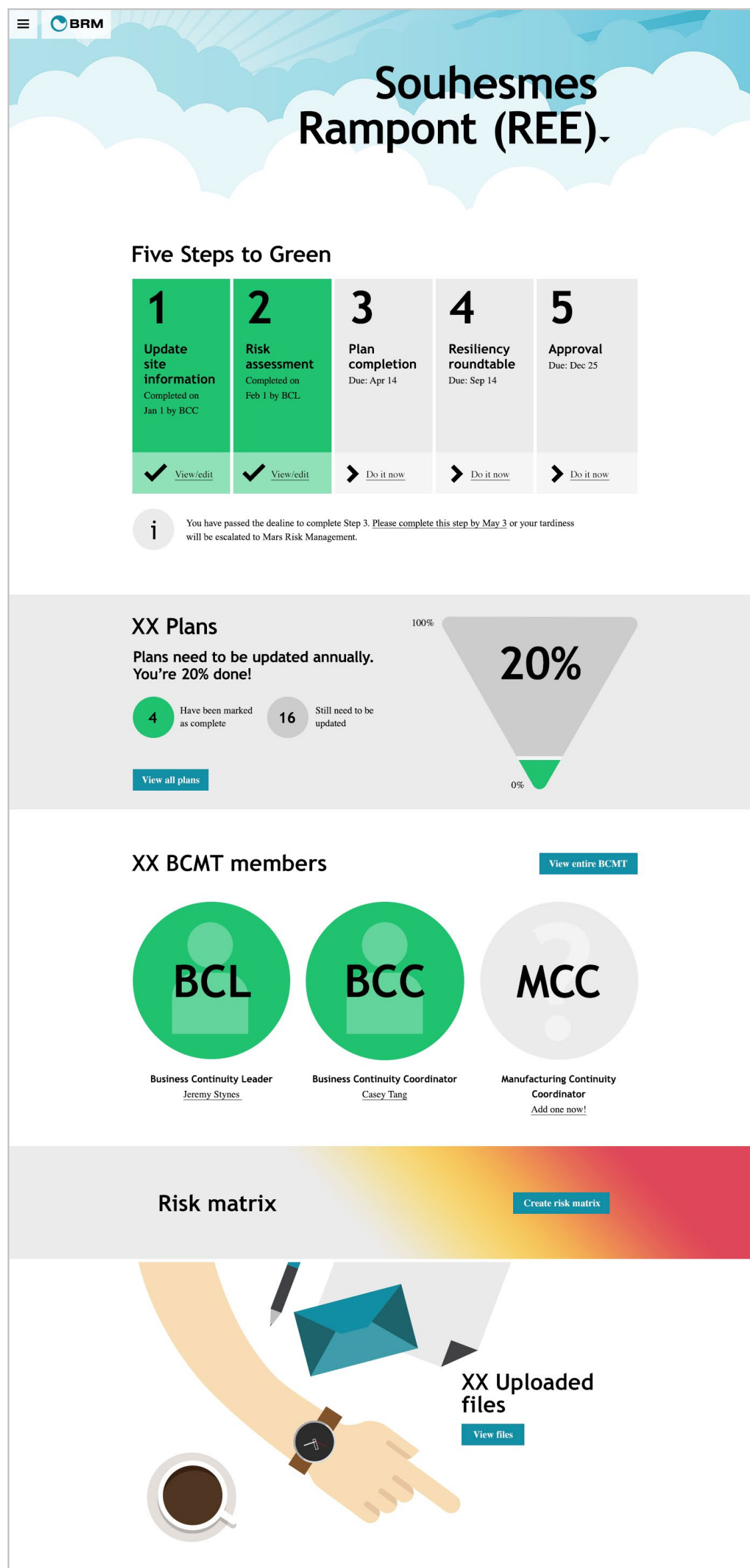
Mars BRM

Increasing engagement and enrollment

Incorporating the best of the in-person workshops creates better planning for users

Building on company culture and in-person workshops, I added additional value by incorporating useful company facts and proven consultant prompts.

While testing prototypes with employees on-site during live workshops, I noticed employees were extremely knowledgeable and excited about past accidents in the company history, as if it were company lore. Observing this engagement on site, I incorporated notable accidents into the planning and simulation part of the experience.

Prompts used by consultants in live workshops to stimulate divergent and convergent thinking were incorporated into the "Plans" phase of the digital experience.

I worked with engineers to create a fully responsive product, paying close attention to micro-interactions, the grid, type scale, and vertical rhythm.

The platform reduced annual operation costs of the program from 4 to 1.8 million dollars and Mars' annual insurance fees.

Mars' Global Risk and Resiliency Portal (GRR)

Previous success leads to a new expanded platform

After our success boosting engagement and completion rates, designing and cutting operational costs and insurance fees with the Business Risk Management platform, Mars requested we expand on our work to create a new platform that took advantage of the overlap between the revamped 1-year training and asset preservation management.

Challenges

Mars operates two programs: one for training staff on risks, and another for tracking and preserving manufacturing equipment. While these appeared as separate programs to management, the staff experienced many overlaps in the programs which led to redundant tasks for them. To address this, we revamped our process to prioritize machine-centric plans over isolated equipment checks, aligning with staff's mental models and use cases for more efficiency.

Role

I was the sole UX designer and researcher on a team of business consultants, engineers, and a CTO who acted as a product manager. I also managed a team of freelance front-end engineers.

Task

Develop a new self-service digital platform encompassing Mar's Risk and Resiliency programs, including business recovery and asset preservation management, to eliminate redundancy and streamline processes by aligning with the end user's mental model and use cases.

Impact

— Aligning goals and mental models of diverse stakeholders
— Broke down company silos to remove redundant tasks for the end users
— Creating a tool and platform that aligned with the mental model and use case of the end users
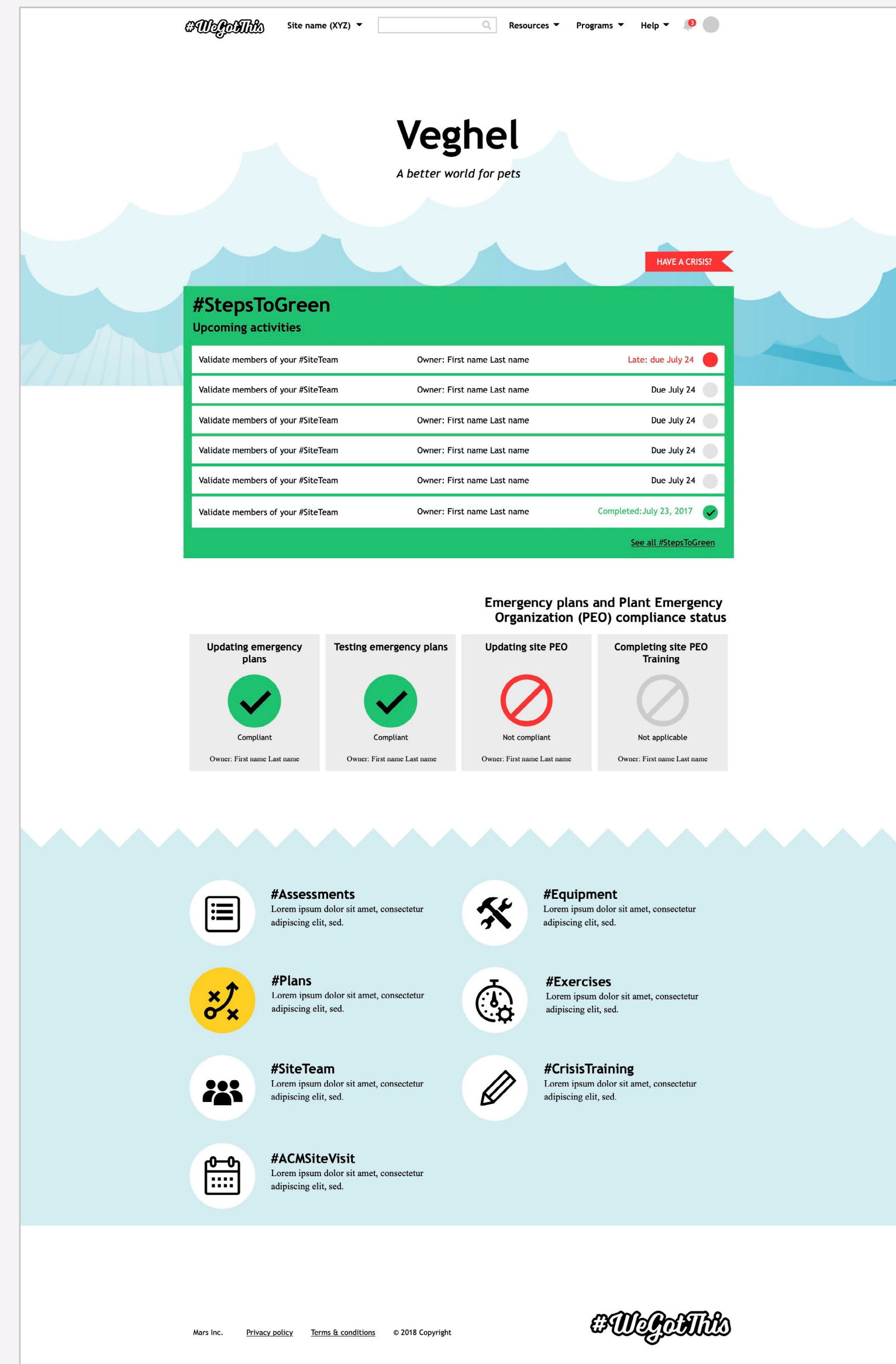
Mars GRR
User-Centric Transformation

Aligning diverse stakeholders and breaking down silos

I noticed several discrepancies between the mental models and goals of the end-users and the structure of the original risk program.

The previous program focused on job roles and responsibilities to create plans around the "Bus Factor," or the minimum number of key individuals within a project or organization whose loss would severely impact the product.

Building stakeholders empathy for their end users

The program owners did not care that their staff had to do redundant tasks due to the programs' silo, which made it easier for managers to generate reports, but for the end user, it was one program. Through the constant touchpoint with design in a year-long engagement, we gradually built empathy for their end users.

Matching product flows with users' mental model and use cases

Following the research, the PM and I created a new process that aligned with the end-users and mental model—it moved away from solely planning around the employee job duties and isolated equipment checks. Instead, we centered plans around machines, affiliated products, and associated experts.

The new processes necessitated combining two siloed programs, Business Recovery Management, and Asset Preservation Management, eliminating redundant tasks and data silos and leading users to create more effective plans. Users entered equipment as in Asset Preservation Management, but now it could be associated with products and plans.

As the user advocate, I take pride in our work to align the platform with the end-users' needs. This alignment has not only made their achievements more visible to corporate management but also enhanced their experience with the platform.
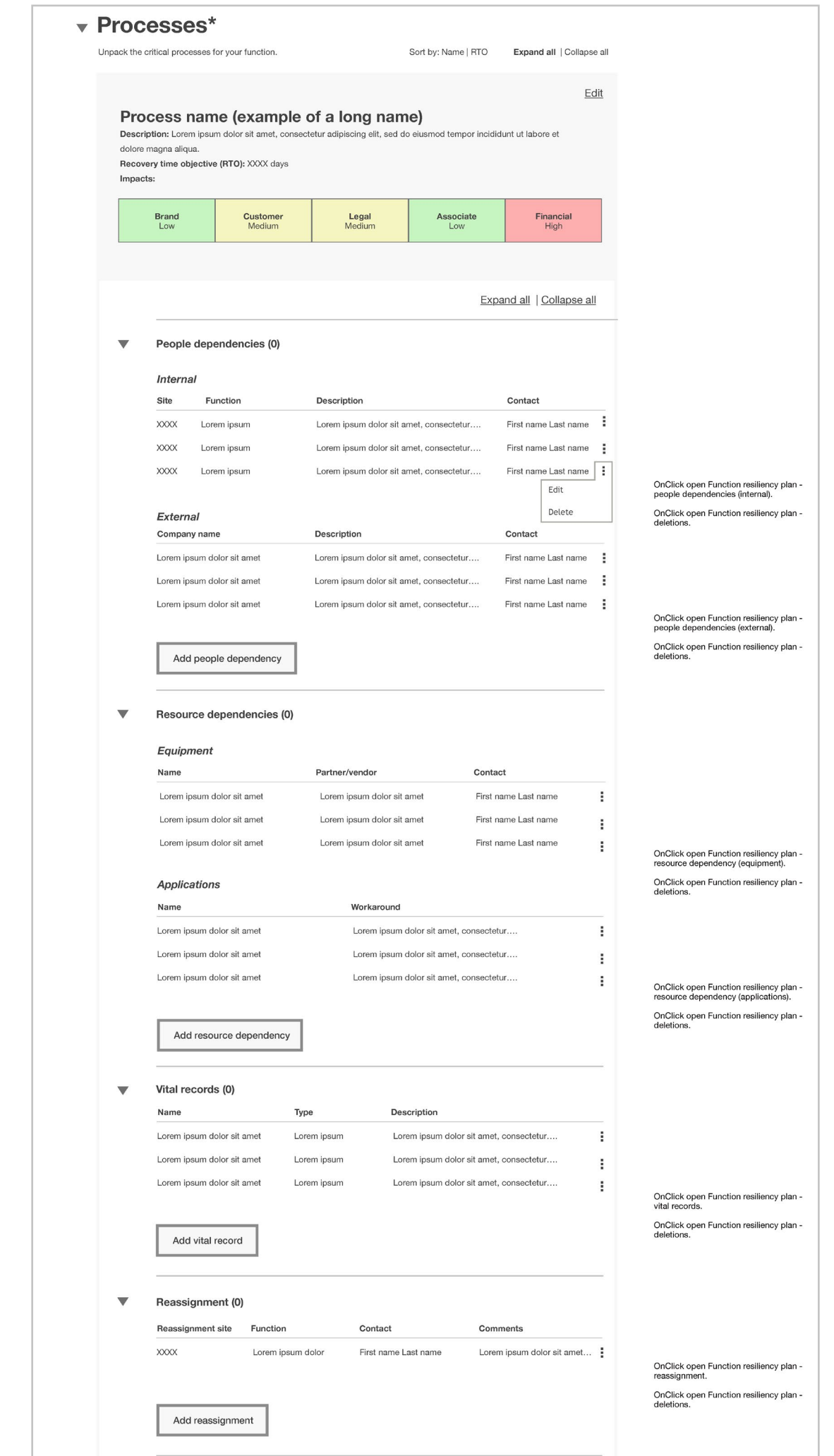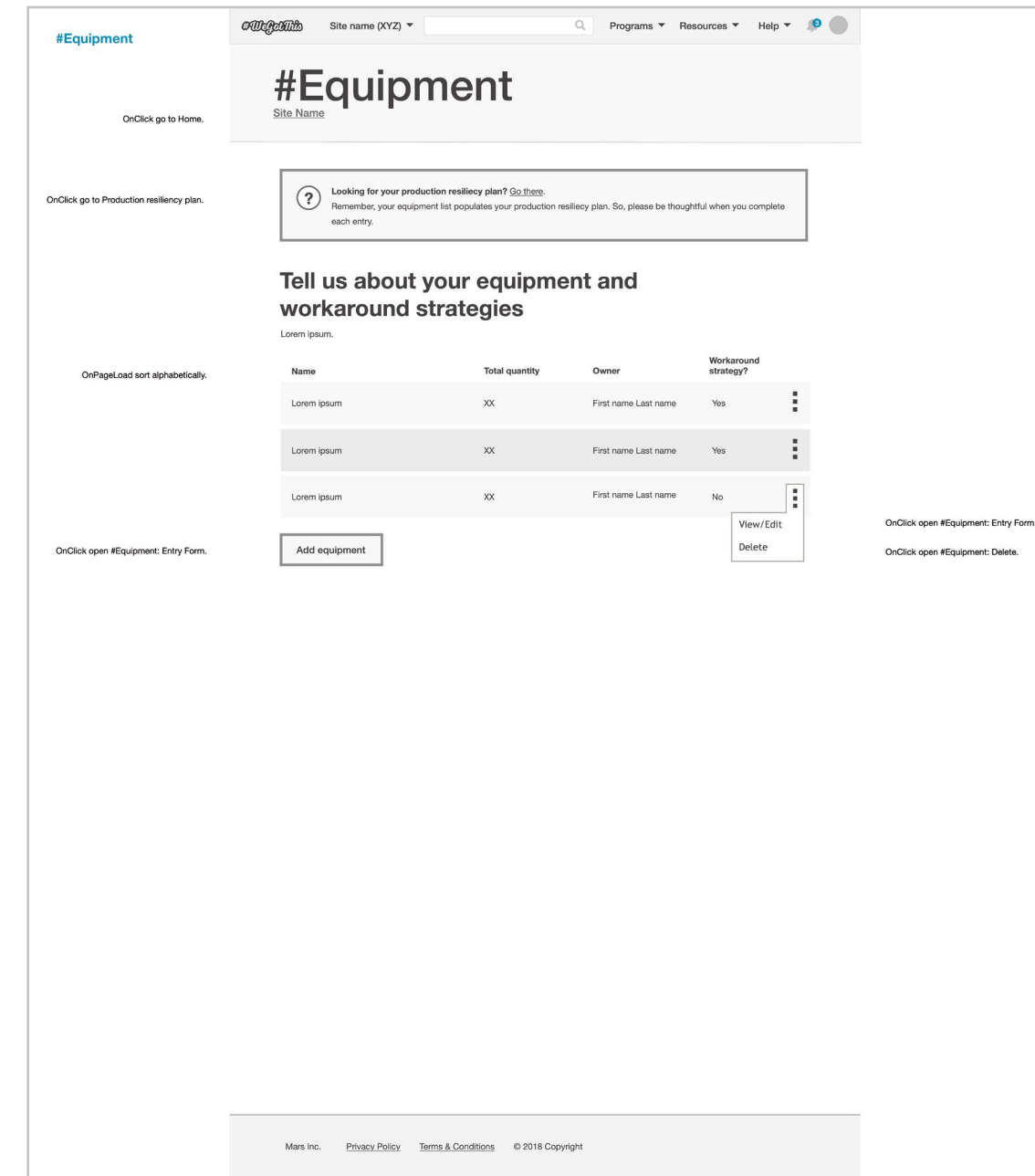
Mars' GRR

Refining through testing

Testing leads to new insights

I tested the prototype with end users onsite. I discovered one machine is used to manufacture multiple products on a rotating basis—an insight leading us to factor in time into the planning process.

Creating a new End-user aligned rating system

I collaborated with the program managers and PM to develop a product priority rating system.The rating system assigns higher priority to products crucial for global distribution and generate significant profit, such as Skittles, as these require faster production and more time on the machine. Conversely, niche products sold locally have lower priority.

In the new platform, end-users are responsible for rating products based on their criticality to the business. They identify the equipment and parts used to manufacture the products and assign associates to equipment and production responsibility. One piece of equipment can be associated with many products and plans.

OVERVIEW

Artstor

A museum collection aggregator that produces discovery, cataloguing, and publishing software

Artstor's database contained 2.5 million records and its platform was used by academics, university students, and museum professionals.

Challenges

— Continuous improve Artstor's main products, a discovery platform, and a cataloging product

— Create new R&D product to generate more value from Artstor's data

— Create a new discovery platform with robust search and linking functionality

Role

Interaction designer on a team with UX designer, art director, a technical project manager, and product manager,

Task

Continuous iterate on Artstor's flagship product, the Artstor Digital Library, while completing other projects, including redesigning marketing and support sites, cataloging software, SharedShelf, and innovative lab projects, including a study card app and a discovery platform

Impact

— Designed the company website by creating site maps, personas, and journeys based on user research, increasing monthly traffic to prioritized news pages by 80%,

— Designed help sites making it easier for users to find relevant technical answers, leading to a 22% reduction of support requests

— Create gamified form to intake metadata from knowledge experts
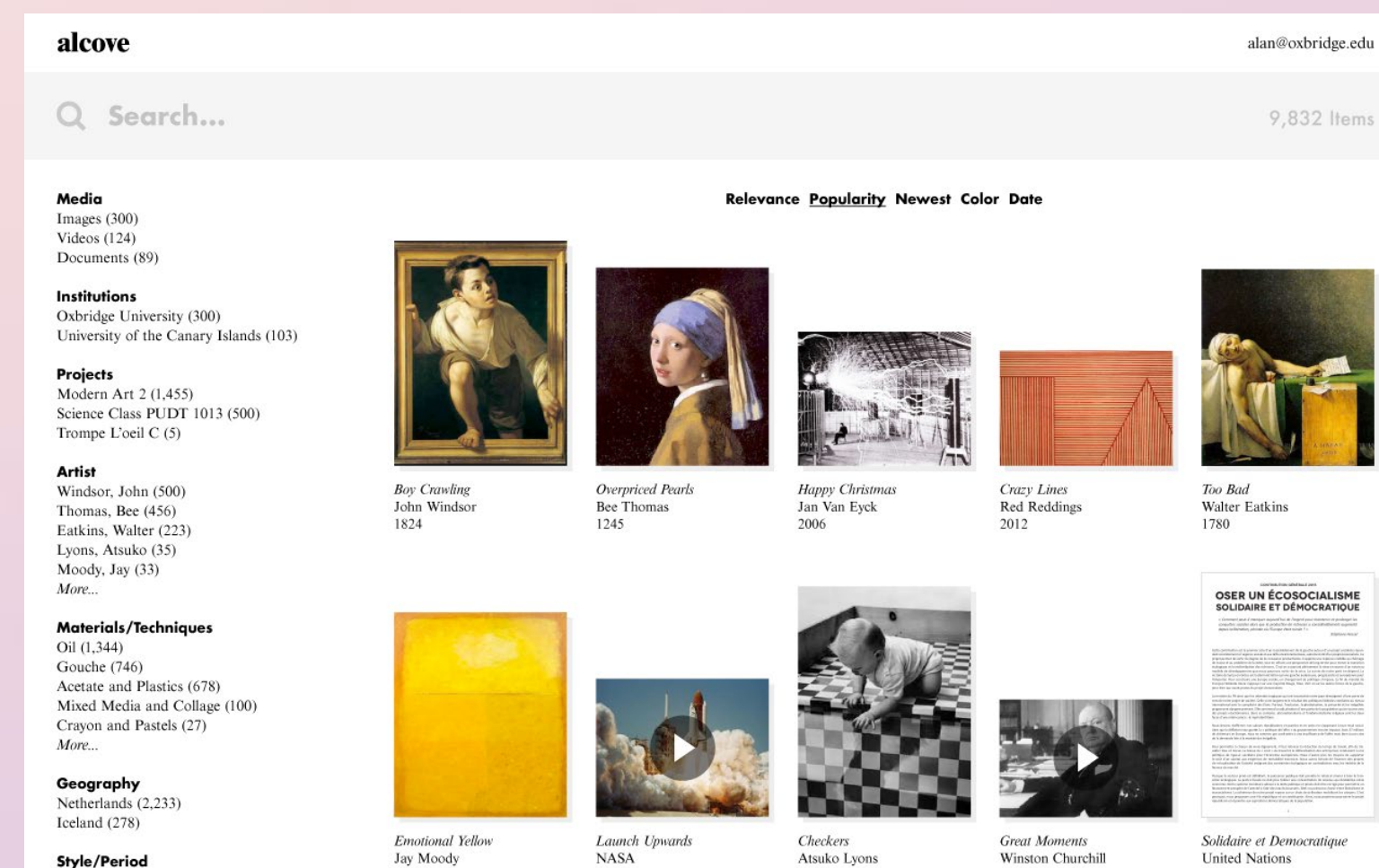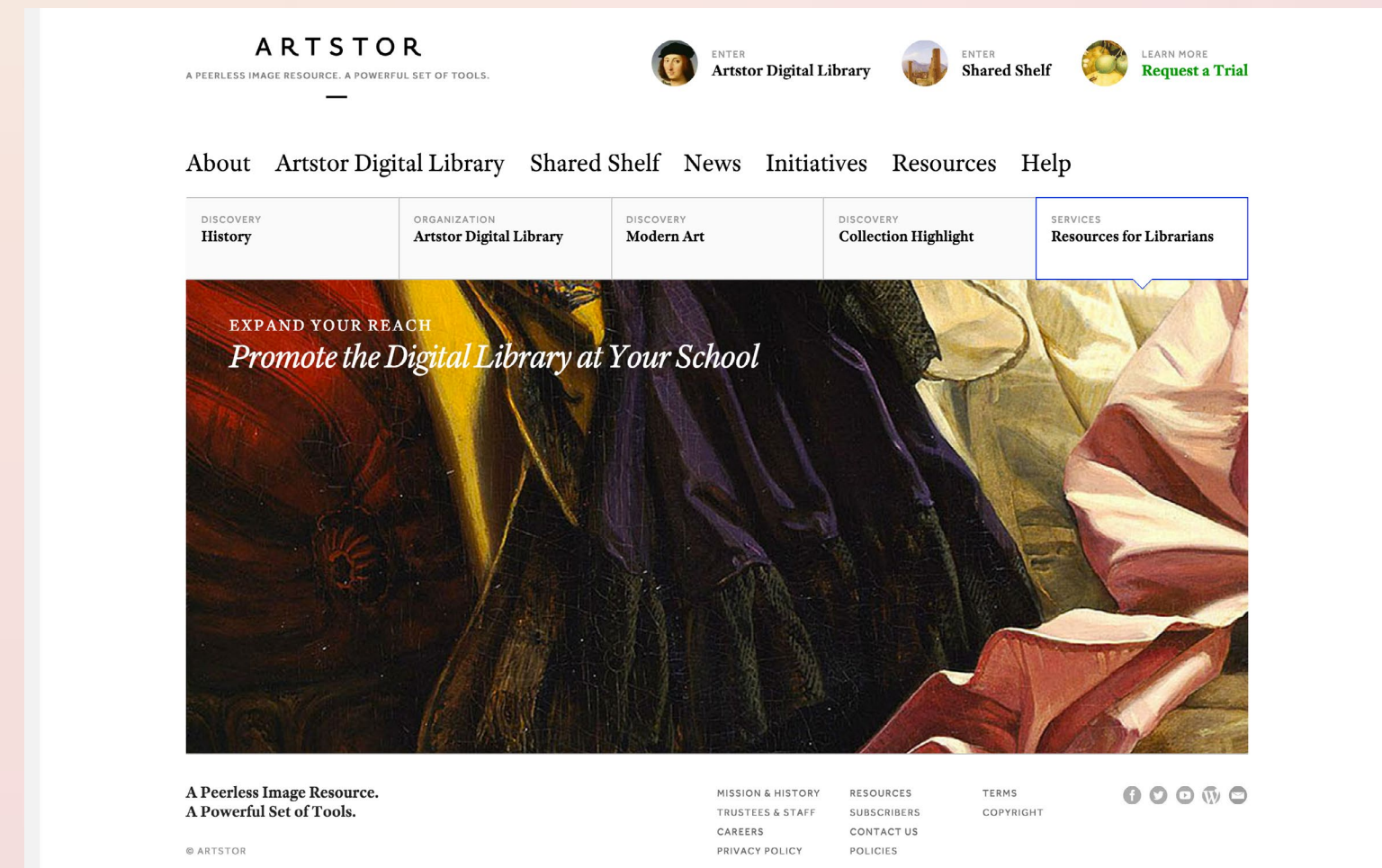
Artstor Arcades

A novel form for data entry

Challenge

Artstor acquired the James Dee Collection, an archive of 250,000 images documenting New York City's modern art scene over the last four decades. None of the collection images had metadata, and Artstor did not have the internal staff resources to add metadata.

Objective

Create a session-based crowdsourcing tool for graduate art history students that allows them to enter metadata for images. Artstor's metadata staff will then harvest raw data for further analysis.

Design

Many of Artstor's users are subject matter experts. In this case they were art history students. I removed traditional metadata fields and instead I replaced it with a simple and repetitive action like in the games Pong and Tetris, in order to reset the users' expectations for an actions generally associated with their work.

Users can navigate the application through the keyboard, creating a more game-like, fluid experience. A different number of points are awarded for the completion of each field. The total number of points awarded is shown in the upper right-hand corner of the page, and all the tagged images are saved below. As the user acquires more points, their player status changes from flâneur to dilettante, apprentice, and connoisseur. The game was well recevied and Artstor recieved a lot of metadata for the James Dee Collection.

Related media

Screen recording
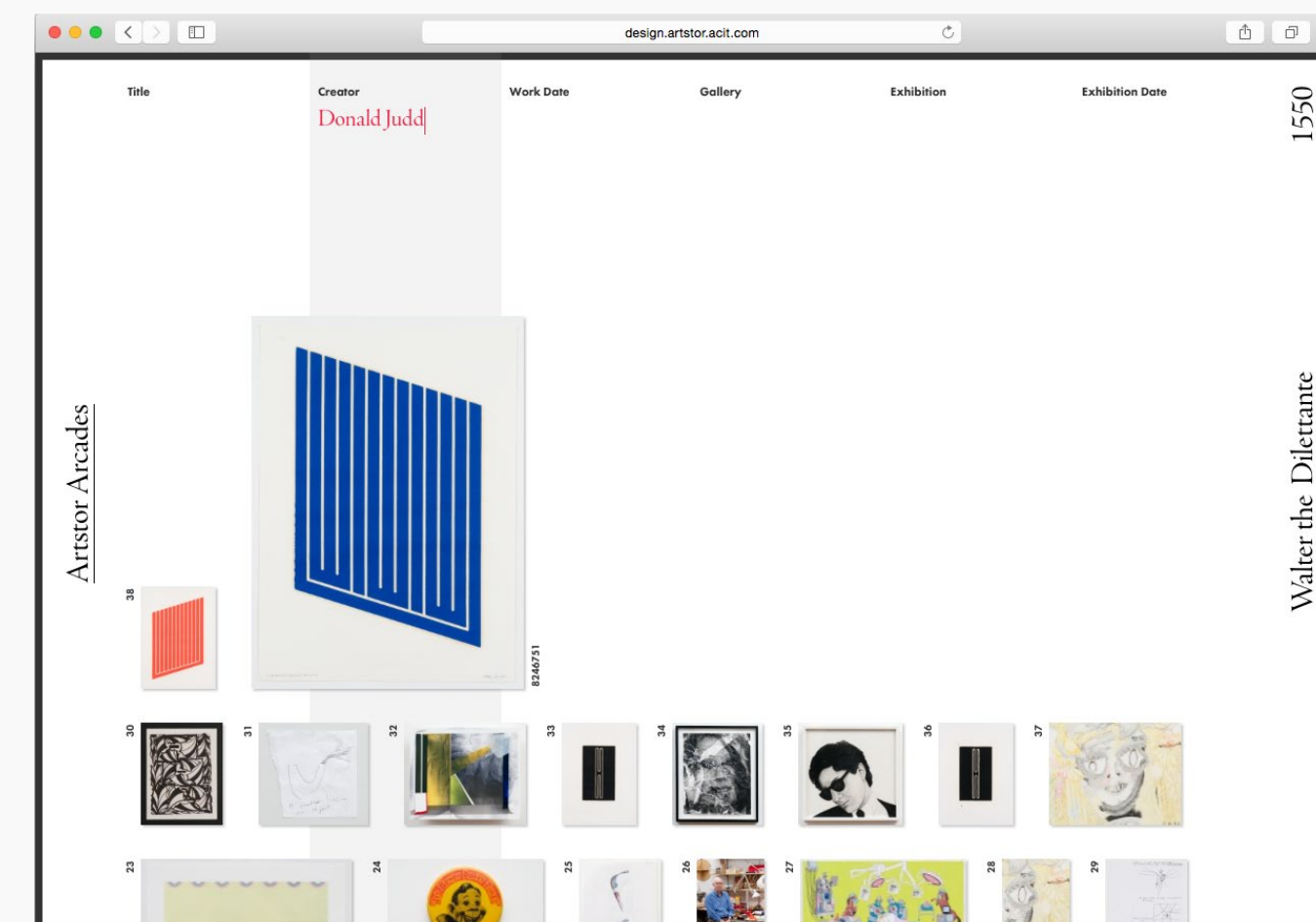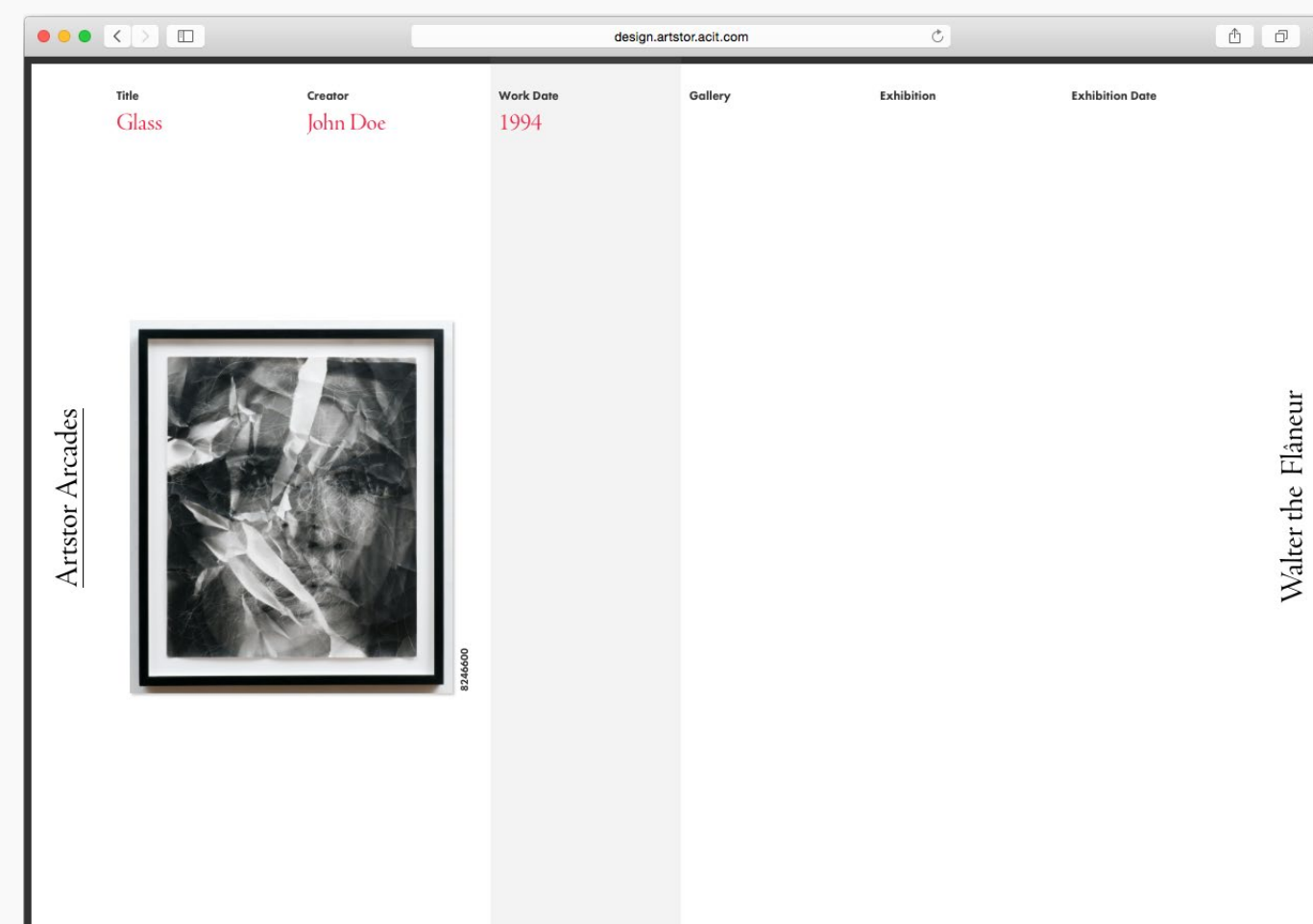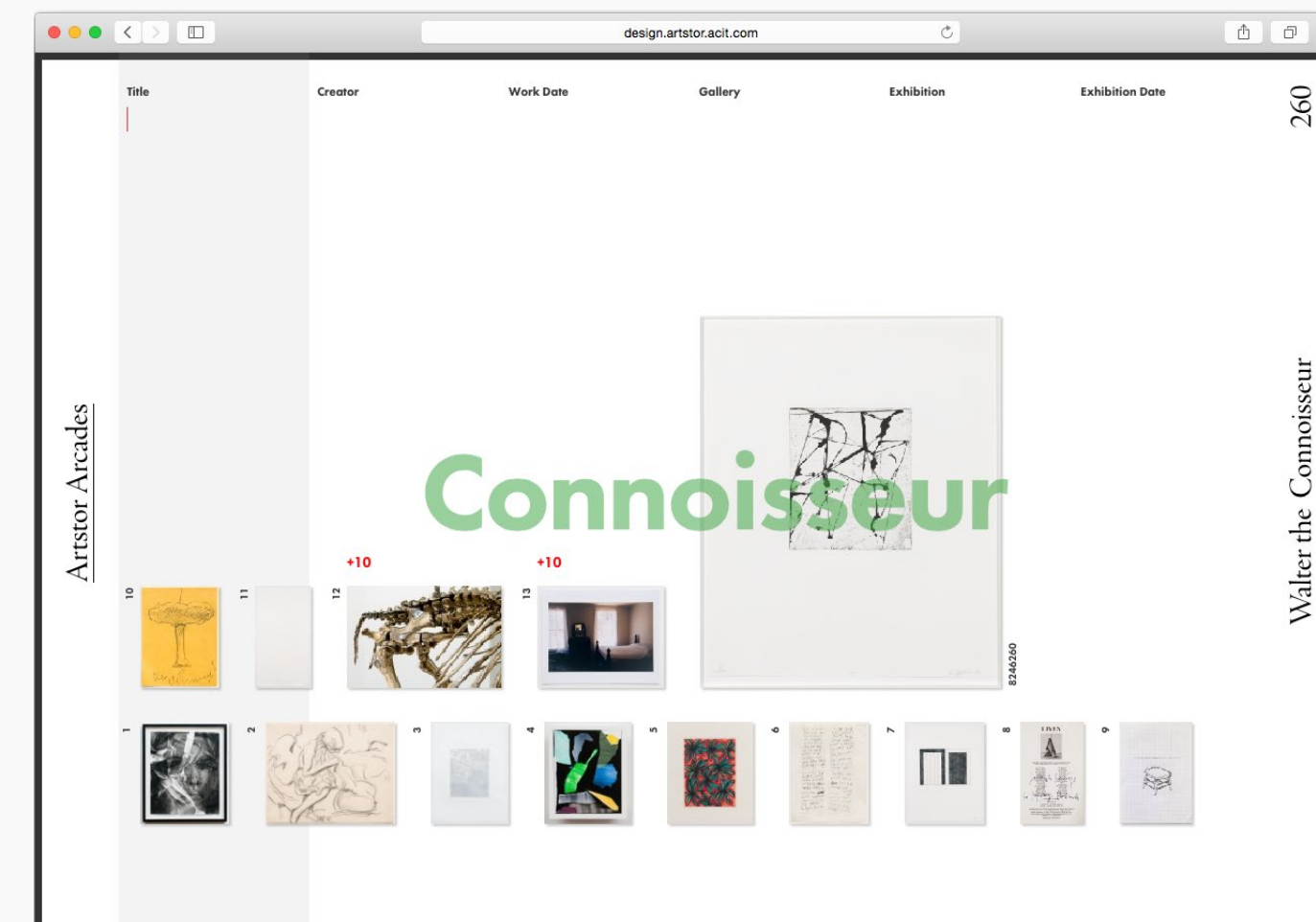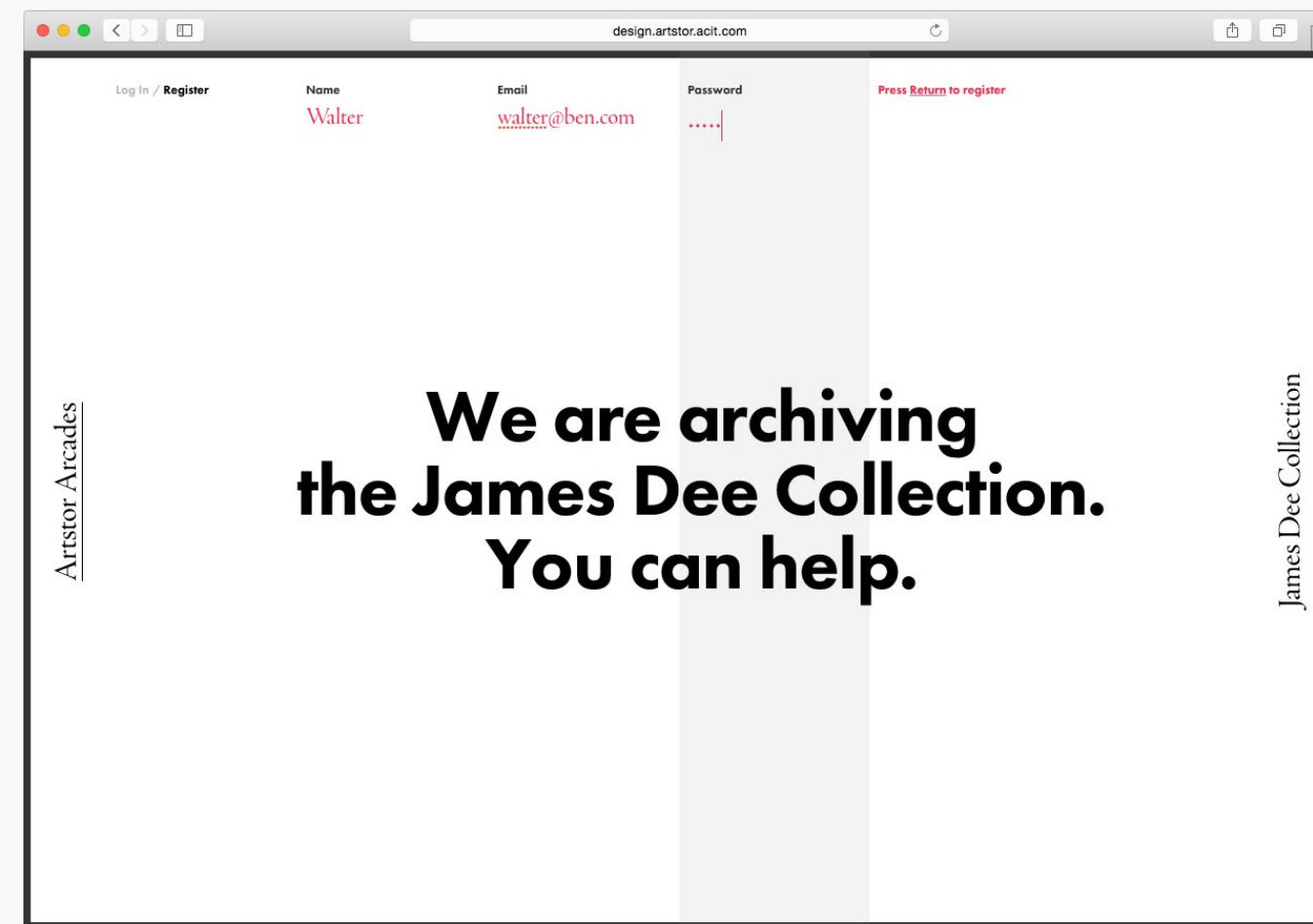
Shared Shelf Work Records

A robust cataloging software

Challenges

Shared Shelf is a cloud-based media management software that enables institutions to catalog, manage, store, and publish digital assets on the Internet.

Within the software, the Work Record is a controlled record (Getty ULAN+, Getty AAT, Getty TGN) where the full details about an item are cataloged and can be published to discovery environments including Artstor's Public Collections, DPLA, and OMEKA sites.

Design

I designed the visual design and the interactions for this project. I needed to seamlessly link Work Records to Display Records (what an end user sees) and Work Records to other Work Records, as well as simplifying the inputting of metadata. I designed the Work Record so it continues the tab theme from the Shared Shelf Display Records. The main panel on the left contains the input fields for metadata. Data here can be linked to several industry-accepted metadata standards. The right-hand panel is automatically populated as the information is entered on the main form.

Artstor Alcove

A more robust discovery platform

Challenges

Alcove was slated to replace Artstor's database as an end-user discovery platform. The original Artstor platform was only efficient at returning basic search results, with little data linking and filtering which hindered exploratory browsing of collections. It also did not have the ability to utilize external data sources such as the Getty art data vocabularies and Wikipedia.

Design

Alcove is built on top of Shared Shelf, a cloud-based cataloging and image management software, and Elasticsearch. I worked on the research, ideation, user flow, personas and created an interface that exposed users to the millions of images and associated data in Artstor.

Dynamic filters and links are connected to vocabulary data that lets users easily explore content in ways not possible in the previous version of Artstor. Alcove allows ease of browsing, discovery, and sharing of collections.

When a user completes a search, the default sort of results is by Relevance. Relevance is determined by the frequency of the keyword in the item record, with appearances in the biographical information fields weighted higher. Exact matches are weighted higher than fuzzy matches. The user has the ability to download the image and metadata or share it.

The user may refine the results by selecting dynamic facets in the left panel. Users can filter all fields, sorted by generic categories. They can also exclude specific categories. When a user selects to open an image, they will go to a full-page view in the same browser tab with both the image and its full metadata.

Artstor Cards

Study Card App

Challenge

To create an iOS/Android app for students that aids in studying media from the Artstor Digital Library.
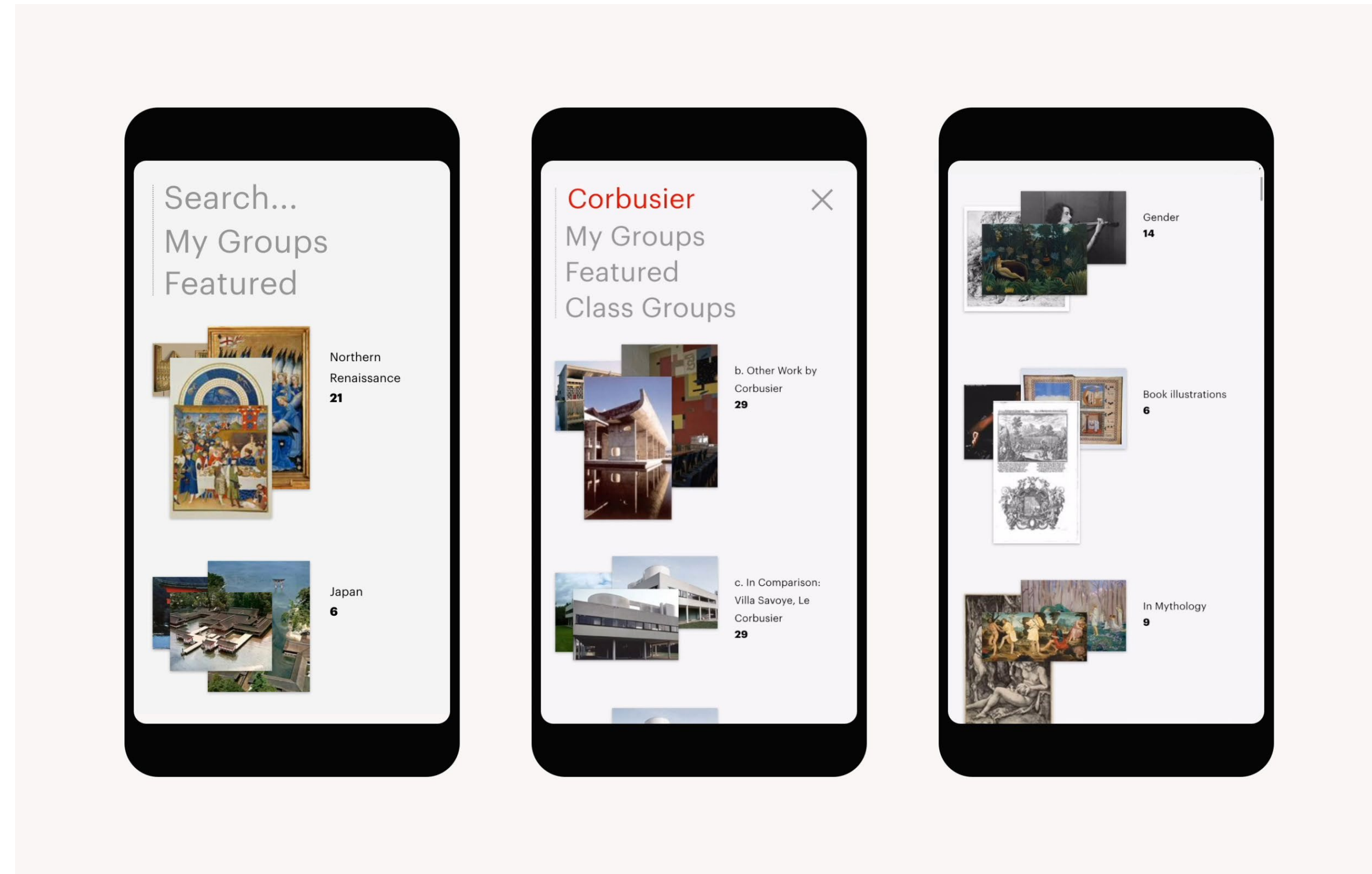
Design

Working with User Services we developed user personas. I then conducted a competitive landscape study and created a user flow, low-fidelity wires, and hi-fidelity design. The final design has two modes: quiz and flash. The user has the ability to save custom decks for later use.

Related media

Screen recording: Study modes

Screen recording: Quiz mode

Working with me

"Casey has a brilliant, deeply analytical mind. Casey brings a holistic approach to research and design. He goes beyond surface-level analysis to uncover underlying trends and patterns, providing valuable insights that not only address immediate challenges but also anticipate future opportunities. He has a unique blend of analytical rigor, creative thinking, and strategic insight to every design endeavor.

His ability to uncover deep insights into user behaviors, preferences, and needs has been instrumental in informing our design decisions and driving innovation within our organization. I would highly recommend Casey to tackle projects and create experiences for very complex system problems and difficult to understand user needs and situations."

Diana Horn, Senior Manager User Experience - Research, Design, and Content at Mozilla

"Casey is the best designer I ever worked with"

Bruce Etling, Senior Data Scientist at Mozilla. Formerly Berkman Klein Harvard, Oxford Internet Institute.

"Casey is a big thinker and unafraid of uncertainty. Straddling both tactical and strategy, he was able to help navigate the rest of his cross-functional team through unclear (and, at times, missing) product definition to arrive at actionable solutions focused on solving user problems'

Jonathan Epstein, Head of Engineering at Mozilla Rally

Thank you!

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