



Nick Osmanski
Senior UX Designer

Case study 1

The VA DBQ Portal

INTERNAL VETERANS AFFAIRS LED RESPIRATORY CONDITIONS (OBSTRUCTIVE SLEEP APNEA) DISABILITY BENEFITS QUESTIONNAIRE

DISCLAIMER: THIS DIFFERENCE OF OPINION APPEAL IS NOT A REQUEST FOR A FAIR HEARING OF CHAMPIONSHIP JUDGEMENT. DISAPPOINTED PLEASE READ THE PROTECT ACT AND DISAPPOINTMENT REQUEST INFORMATION

PATIENT/VISITOR SOCIAL SECURITY NUMBER

NOTE TO PATIENTS: You must be working in the U.S. Department of Veterans Affairs to be disability benefits. It's all you can do the information you provide in this questionnaire as part of their application or processing for relevant claims.

1. I am a patient
 I am a visitor
 How was the information obtained from the VA?
 My records required
 My records received
 Other, please specify in comments.
 Other, please specify in comments.

2. ACCEPTABLE CLINICAL EVIDENCE PAGE

INDICATE IF NOT USED TO OBTAIN MEDICAL INFORMATION TO COMPLETE THIS DOCUMENT:

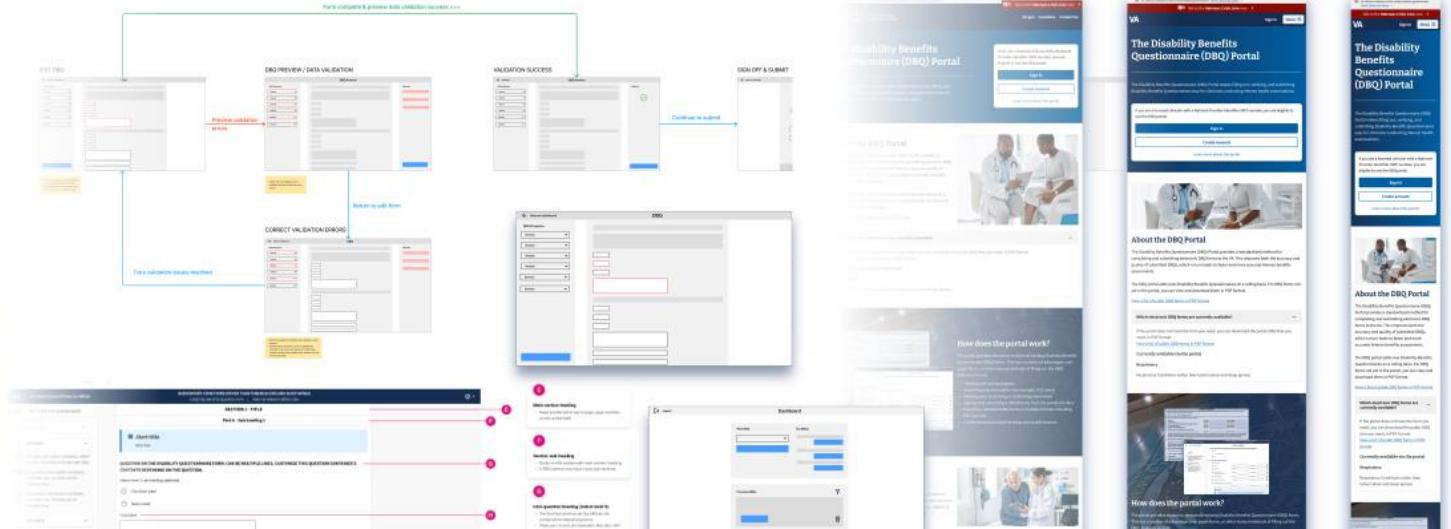
Reasons of available records checked in prior to or relevant information using the Acceptable Clinical Evidence (ACE) process because the existing medical information did not meet the requirements of the ACE process:
 Reasons of available records in conjunction with an interview with the Veteran related to a service or relevant information using the ACE process because it was not available in the existing medical information:
 Reasons of available records in conjunction with an interview with the Veteran related to a service or relevant information using the ACE process because it was not available in the existing medical information.

3. EVIDENCE REVIEW

4. EVIDENCE COMMENTS

5. BEST CARE MANAGER

6. ATTACHMENT



The DBQ Portal

Overview

Background

- Clinicians send Disability Benefits Questionnaire (DBQ) forms to the VA
- DBQs are paper forms, electronic PDFs, or some database format (ex: csv, xml)

The problem

- VA spends a lot of time correcting errors, and confirming information accuracy
- This creates more work for Rating Veterans Service Representatives (RVSRs), and prevents Veterans from receiving their benefits in a timely manner

A DBQ form

HEART CONDITIONS (INCLUDING ISCHEMIC AND NON-ISCHEMIC HEART DISEASE, ARRHYTHMIAS, VALVULAR DISEASE AND CARDIAC SURGERY) DISABILITY BENEFITS QUESTIONNAIRE		
Name of Patient/Veteran	Patient/Veteran's Social Security Number	Date of examination:
IMPORTANT - THE DEPARTMENT OF VETERANS AFFAIRS (VA) WILL NOT PAY OR REIMBURSE ANY EXPENSES OR COST INCURRED IN THE PROCESS OF COMPLETING AND/OR SUBMITTING THIS FORM.		
Note - The Veteran is applying to the U.S. Department of Veterans Affairs (VA) for disability benefits. VA will consider the information you provide on this questionnaire as part of its decision in processing the Veteran's claim. VA may obtain additional medical information, including an examination, if necessary, to complete VA's review of the Veteran's application. VA reserves the right to confirm the authenticity of ALL completed questionnaires. It is intended that questionnaires will be completed by the Veteran's healthcare provider.		
Are you completing this Disability Benefits Questionnaire at the request of:		
<input type="checkbox"/> Veteran/Claimant		
<input type="checkbox"/> Third party (please list name(s) of organization(s) or individual(s))		
<input type="checkbox"/> Other: please describe	<input type="text"/>	
Are you a VA Healthcare provider? <input type="radio"/> Yes <input type="radio"/> No		
Is the Veteran regularly seen as a patient in your clinic? <input type="radio"/> Yes <input type="radio"/> No		
Was the Veteran examined in person? <input type="radio"/> Yes <input type="radio"/> No		
If no, how was the examination conducted?		
EVIDENCE REVIEW		
Evidence reviewed:		
<input type="radio"/> No records were reviewed		
<input type="radio"/> Records reviewed		
Please identify the evidence reviewed (e.g. service treatment records, VA treatment records, private treatment records) and the date range.		

The DBQ Portal

Overview

My role

- The sole designer assigned to this project team, supporting:
 - Front-end developers
 - Back-end developers
 - VA PO and SMEs
 - Internal PMs
- Final deliverables included:
 - Developer-ready design system components
 - Hi-fi mockups and prototypes
 - Demos and presentations to PMs and POs
 - (5-6 months project time)

Solution & impact

- An electronic portal where users could fill out and send DBQ forms to the VA, incorporating standardized formatting and form data validation
- Consistent positive reactions from VA stakeholders and SMEs
 - 10 DBQ forms designed
 - Planned expansion of scope before project termination

Interviews

- VA stakeholders: POs and PMs
 - VA Product Owner feedback about the state of the DBQ form process
 - VA Project Managers provided insight to the goals and needs of the project
 - VA SMEs: Clinicians and RVSRs
 - I interviewed retired and practicing VA clinicians
 - I spoke to practicing VA Rating Veterans Service Representatives (RVSRs)

DBQ form UX evaluation

- Form improvements
 - Standard sections for non-sequential navigation
 - Collapse conditional elements
 - Simplify Diagrams

3. DOES THE VETERAN HAVE ANY OF THE FOLLOWING PULMONARY CONDITIONS?

YES NO (*If "No," proceed to Section IV*) (*If "Yes," check all that apply:*)

Asthma
 Bronchiectasis
 Sarcoidosis
 Pulmonary embolism and related diseases
 Bacterial lung infection
 Mycotic lung infection
 Pneumothorax
 Gunshot/fragment wound
 Cardiopulmonary complications
 Respiratory failure
 Tumors or neoplasms
 Other pulmonary conditions, pertinent physical findings:
(If checked, complete Part L below)

5D. List missing teeth by number:

Right Upper	Left Upper
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Right Lower	Left Lower
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17

5D. List missing teeth by number:

Right Upper	Left Upper
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8	<input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16
Right Lower	Left Lower
<input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24	<input type="checkbox"/> 25 <input type="checkbox"/> 26 <input type="checkbox"/> 27 <input type="checkbox"/> 28 <input type="checkbox"/> 29 <input type="checkbox"/> 30 <input type="checkbox"/> 31 <input type="checkbox"/> 32



The clinician

Both private (unlicensed by the VA) and licensed clinicians see multiple patients per day, and may not complete a DBQ in one setting.

Needs

- To stop and resume a DBQ form
- To be notified of conflicting form entries and missing information

Pain points

- Ambiguous wording or unclear DBQ instructions
- Long and unnecessary sections of the DBQ form



The VA RVSR

The RVSR handles multiple DBQ forms for each Veteran. Rating is time consuming, so each error has a compounding effect.

Needs

- Complete DBQ forms
- Data consistency and accuracy (no conflicts)

Pain points

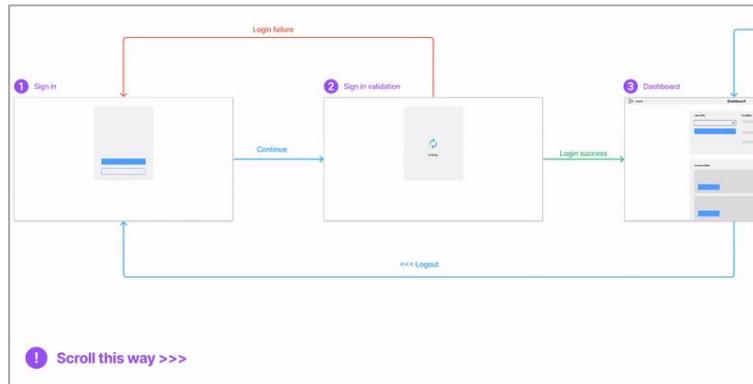
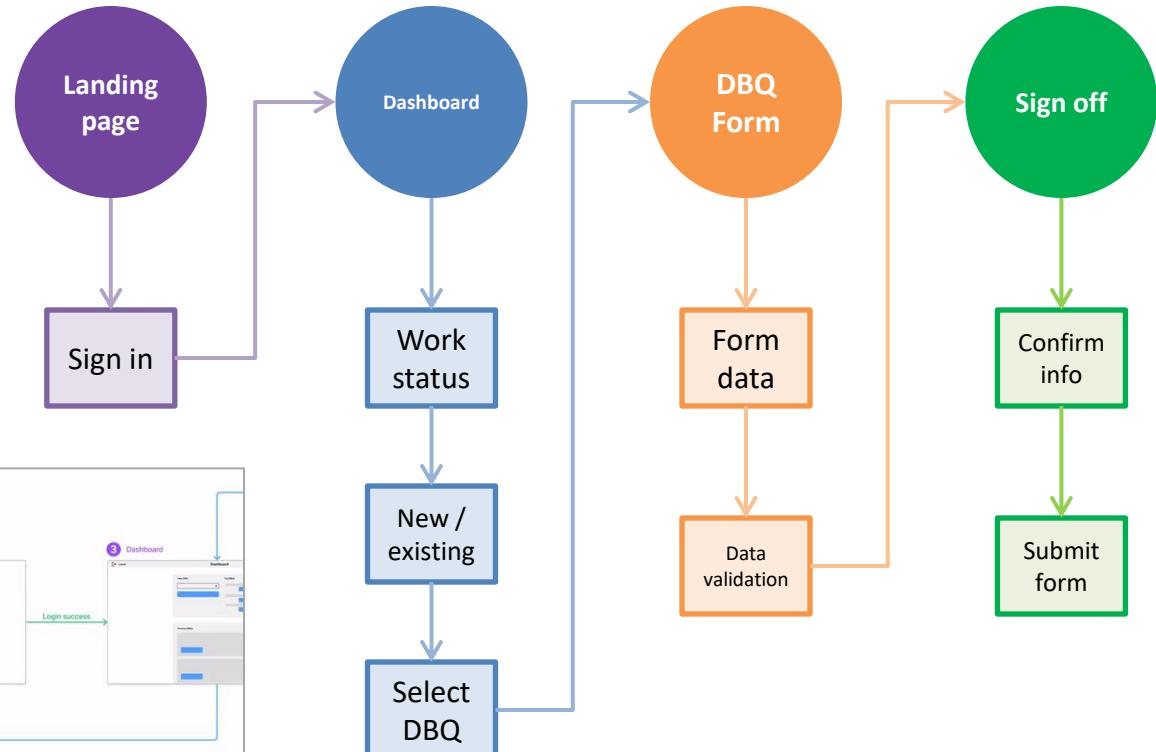
- Incomplete or conflicting form data
- Illegible handwritten form sections
- Manually searching through DBQ forms

The DBQ Portal

User flow

Key features

- From VA PM and POs:
 - Landing page
 - A dashboard
 - The DBQ form
 - Validating form data
 - Sign and submit



The DBQ Portal

Design iteration

Lo-fi form

Return to dashboard

DBQ Navigation

- Section

DBQ

Mid-fi form

Return to dashboard

Search DBIQ

DBIQ Sections

- I - Section heading
 - 1A. Question about the Veteran's condition with multiple choices and fields
 - 1B. Question with long description field
 - 1C. Question with radio buttons and conditional triggers
- Part A - Sub-heading
 - 1A. Example question that appears conditionally
- II - Section heading
 - 1A. Question about the Veteran's condition with multiple choices and fields
 - 1B. Question with long description field
 - 1C. Question with radio buttons and conditional triggers
- III - Section heading
 - 1A. Question about the Veteran's condition with multiple choices and fields
 - 1B. Question with long description field
 - 1C. Question with radio buttons and conditional triggers
- Part A - Sub-heading
 - 1A. Example question that appears conditionally
- IV - Section heading
 - 1A. Question about the Veteran's condition with multiple choices and fields
 - 1B. Question with long description field
 - 1C. Question with radio buttons and conditional triggers
- V - Section heading
 - 1A. Question about the Veteran's condition with multiple choices and fields
 - 1B. Question with long description field
 - 1C. Question with radio buttons and conditional triggers

Respiratory Disability Benefits Questionnaire

SECTION # - SECTION HEADING

NOTE TO PHYSICIAN

Your patient is applying to the U.S. Department of Veterans Affairs (VA) for disability benefits. VA will consider the information you provide on this questionnaire as part of their evaluation in processing the Veteran's claim.

1A. Example question about the Veteran's condition with multiple choices and fields:

Additional context information about the question.

Choice Label Label

Choice Label Label

Choice Label Label

1B. Example question with a long description field:

Additional context information about the question.

1C. Example question with radio buttons that trigger conditional:

Additional context information about the question.

Yes

No

PART A - SECTION SUB-HEADING

NOTE TO PHYSICIAN

Your patient is applying to the U.S. Department of Veterans Affairs (VA) for disability benefits. VA will consider the information you provide on this questionnaire as part of their evaluation in processing the Veteran's claim.

Testing prototype

VA | RESPIRATORY CONDITIONS (OTHER THAN SLEEP TUBERCULOSIS AND SLEEP APNEA)

Disability Benefits Questionnaire | Internal Veterans Affairs Use

SECTION HEADING

1A. QUESTION 1 - AN EXAMPLE QUESTION ON THE DBQ FORM. THIS QUESTION CAN BE MULTIPLE LINES.

Yes

No

1B. QUESTION 2 - EXAMPLE QUESTION ON THE DBQ FORM. THIS QUESTION CAN BE MULTIPLE LINES.

Yes

No

1C. QUESTION 3 - EXAMPLE QUESTION ON THE DBQ FORM. THIS QUESTION CAN BE MULTIPLE LINES.

Yes

No

U.S. Department of Veterans Affairs

RESPIRATORY CONDITIONS (OTHER THAN TUBERCULOSIS AND SLEEP APNEA)
Disability Benefits Questionnaire | Internal Veterans Affairs Use

SECTION I - DIAGNOSIS

1A. DOES THE VETERAN NOW HAVE OR HAS HE OR SHE EVER BEEN DIAGNOSED WITH A RESPIRATORY CONDITION?

Yes
 No
 If "Yes," complete item 1B

1B. SELECT THE VETERAN'S CONDITION
Check all that apply

Response is required
 Asthma ICD Code Date of diagnosis
 Emphysema ICD Code Date of diagnosis
 Chronic Obstructive Pulmonary Disease (COPD) ICD Code Date of diagnosis
 Chronic bronchitis ICD Code Date of diagnosis
 Constrictive bronchiolitis ICD Code Date of diagnosis
 Interstitial lung disease (if checked, specify):
 ICD Code Date of diagnosis
 Response is required

Note
Interstitial lung diseases include but are not limited to asbestosis, diffuse interstitial fibrosis, interstitial pneumonitis, fibrotic alveolitis, desquamative interstitial pneumonitis, pulmonary alveolar proteinosis, eosinophilic granuloma of lung, drug-induced pulmonary pneumonitis and fibrosis, radiation-induced pulmonary pneumonitis and fibrosis, hypersensitivity pneumonitis (extrinsic allergic alveolitis) and pneumoconiosis such as silicosis, anthracosis, etc.

Restrictive lung disease (if checked, specify):
 ICD Code Date of diagnosis
 Response is required

Note
Restrictive lung diseases include but are not limited to diaphragm paralysis or paresis, spinal cord injury with respiratory insufficiency, kyphoscoliosis, pectus excavatum, pectus carinatum, traumatic chest wall defect, pneumothorax, hernia, etc., post-surgical residual (lobectomy, pneumonectomy, etc.), chronic pleural effusion or fibrosis.

Mycotic lung disease (if checked, specify):
 ICD Code Date of diagnosis

SECTION II
SECTION III
SECTION IV
SECTION V
SECTION VI

RETURN TO DASHBOARD

EXPAND ALL QUESTIONS

Veteran Information
John Veteranski
*****1234

ACE

Evidence Review

SECTION I

1A. Does the veteran now have or has he or she ever been diagnosed with a respiratory condition?
1B. Select the veteran's condition
1C. If there are additional diagnoses that pertain to respiratory conditions, list using above format:

How & who

- Remote usability testing using Figma prototypes and a UAT live site
- Participants were given a general task: complete and send in a DBQ
- 3 clinicians, 1 VA PM, 1 RVSR

Results

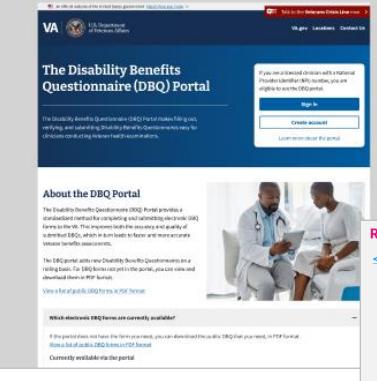
- New features included:
 - Side panel status icons
 - Veteran info context
 - Hide/show conditionals
- General positive feedback
 - More efficient
 - Participants preferred this over their current workflow

The DBQ Portal

Final deliverables

Deliverables

- Design system components
 - 508 compliant colors, grids, typography, form elements etc.
- Mockups & prototypes
 - Annotated for developers
 - Desktop / mobile breakpoints
 - 10 DBQs in total
- Demos
 - End-of-sprint presentations to PMs and POs
- Front-end QA
 - Local server in Docker
 - Notes & feedback for devs



Responsive design

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An annotated screenshot of the VA Disability Benefits Questionnaire (DBQ) Portal medical history section. The left sidebar shows a navigation menu with sections like "VETERAN INFORMATION", "AID", "EVIDENCE REVIEW", and "SECTION I" through "SECTION X". The main content area is titled "SECTION I - Medical History" and contains a validation message: "3 issues detected" with a yellow background. Below this is a question: "Does the veteran's respiratory condition require the use of oxygen?". The user has selected "Yes". A validation message follows: "Validation issue" with a yellow background. The next section is "SECTION II - Pulmonary Conditions" with a validation message: "Validation issue" and "Does the veteran have obstructive pulmonary disease?". The user has selected "Yes". Another validation message follows: "Validation issue" and "Does the veteran have chronic bronchitis?". The user has selected "Yes". The right side of the screenshot shows a detailed callout with numbered arrows pointing to specific UI elements, such as the validation messages and the "Yes" radio buttons.

Indent structure update

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A. Old design (deprecated)

Form container

A screenshot of the old design for the VA Disability Benefits Questionnaire (DBQ) Portal medical history section. It shows a complex nested structure of form fields and validation messages. A red circle highlights a validation message: "Validation issue" with a yellow background. Another red circle highlights a field labeled "Are you currently using oxygen?". The overall layout is cluttered and non-linear.

B. New design - updated container structure, indent, & border style

Form container

A screenshot of the new design for the VA Disability Benefits Questionnaire (DBQ) Portal medical history section. The validation message "Validation issue" is now placed directly below the question "Does the veteran's respiratory condition require the use of oxygen?", making it more immediate. The overall layout is cleaner and more organized, using a single-level nesting structure for form fields.

C. Newest updates + contiguous radio buttons

Form container

A screenshot of the newest design for the VA Disability Benefits Questionnaire (DBQ) Portal medical history section. The validation message "Validation issue" is now placed directly below the question "Does the veteran's respiratory condition require the use of oxygen?", and the radio buttons for "Yes" and "No" are now grouped together under a single label "Are you currently using oxygen?", which is enclosed in a blue border. The overall layout is clean and modern.

Mini retro

- Lessons learned
 - More experience communicating design to devs (front-end QA review)
 - Making design system readable / navigable
- Do anything differently?
 - More usability testing with clinicians
 - No time for read data validation testing in UAT environment

Next up...



Nick Osmanski
Senior UX Designer

Case study 2

Data visualization application



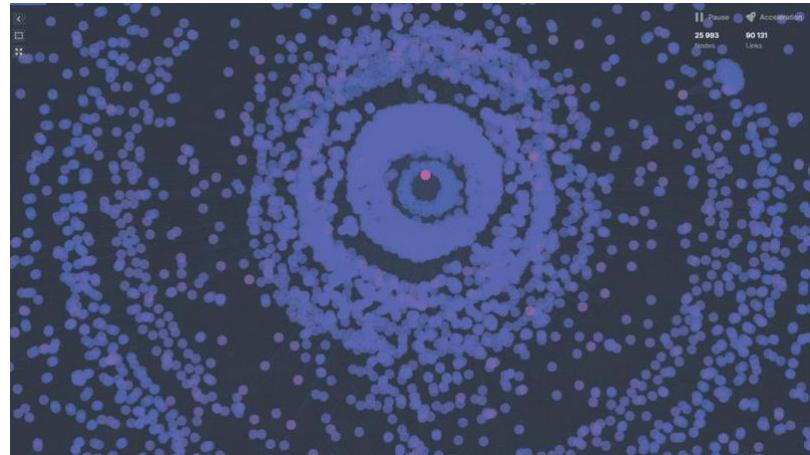
Background

- Amida's management and engineering team wanted to leverage their expertise to fill a gap in the cyber security market
- They resolved to use an existing tool that incorporated graph theory and data visualization

The problem

- The closest existing tool did not have the depth of interactivity needed to fulfill the intended use case
- Amida could not demonstrate their ability to fill the gap in the market without this functionality

Node and edge graph (Cosmograph)



My role

- The sole designer assigned to this project team, supporting:
 - Front-end developers
 - Back-end developers
 - Internal SMEs
 - Internal PMs and upper management
- Final deliverables included:
 - Developer-ready design system components
 - Hi-fi mockups and prototypes
 - Demos and presentations
 - (5-6 month project time)

Solution & impact

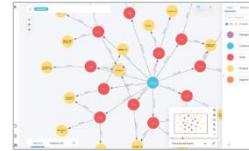
- A custom tool built in-house, incorporating graph theory in its data visualization, progressive levels interaction, and demos and marketing materials designed to pitch the solution to potential customers
- Positive reactions from internal management, SMEs, and potential customers
 - The prototype solution was pitched to a number of leaders in the cyber security field, to positive feedback, and new business leads for Amida

Interviews

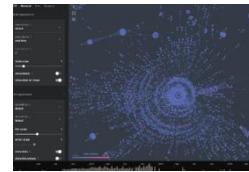
- Team SMEs:
 - Front-end engineers
 - Back-end engineers
 - Graph theory & computer science experts
- I spoke with the team as a group, and each member individually
 - I learned the basics of node and edge graph visualization
 - They explained current solution limitations
 - Suggested features

Competitive analysis

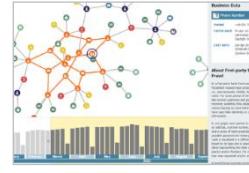
Neo4j



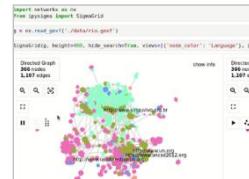
Cosmograph



yFiles library



ipySigma library



Polished UI and useful features



Limited depth of detail on nodes and edges, in terms of visual representation of the data



Large data set representation, real time graph movement



Relatively simple UI features, and limited node/edge visual detail



Many different options for displaying data as node-and-edge graphs



Limited detail and interaction for individual nodes and edges



High level of customizability via library API access



Once again, limited out-of-the-box node and edge interaction detail



John Persona, 42 *Cybersecurity engineer*

John is an educated cybersecurity engineer and analyst. He leads a team of supporting analysts, and he reports directly to leadership about critical business decisions.

Goals

- ! John wants to make informed decisions about technical issues quickly and accurately.
- ! John wants to provide critical updates to leadership, who may include non-technical people.
- ! John wants to communicate issues to the customer, simply and effectively.

Needs

- + John needs to navigate the graph quickly and intuitively, while retaining data context.
- + As an SME, John needs specifically requested required features to be implemented.
- + John needs the application to recommend solutions for given cybersecurity scenarios.

Frustrations

- John doesn't like the simplicity of the existing data visualization solutions.
- John doesn't like having to manually search through data that is difficult to parse.
- John doesn't want to waste time recreating the same analysis scenarios for different data sets.

“

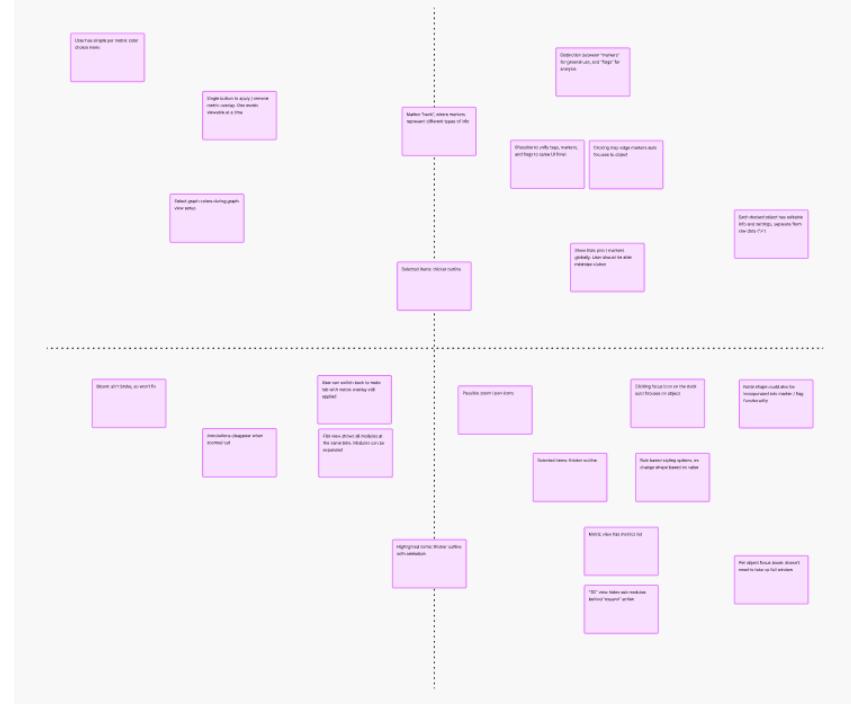
I need to access low and high levels of information density, while retaining context, in order to see the bigger picture.

”

MVP feature consolidation

- The team consisted SMEs, and each had a list of “required” features that would suit their workflows
- I used an importance/difficulty matrix to consolidate MVP features, including:
 - A dashboard
 - Project setup
 - Multiple graph “views”
 - Analysis heuristics
 - The graph
 - Graph element interaction
 - List of elements

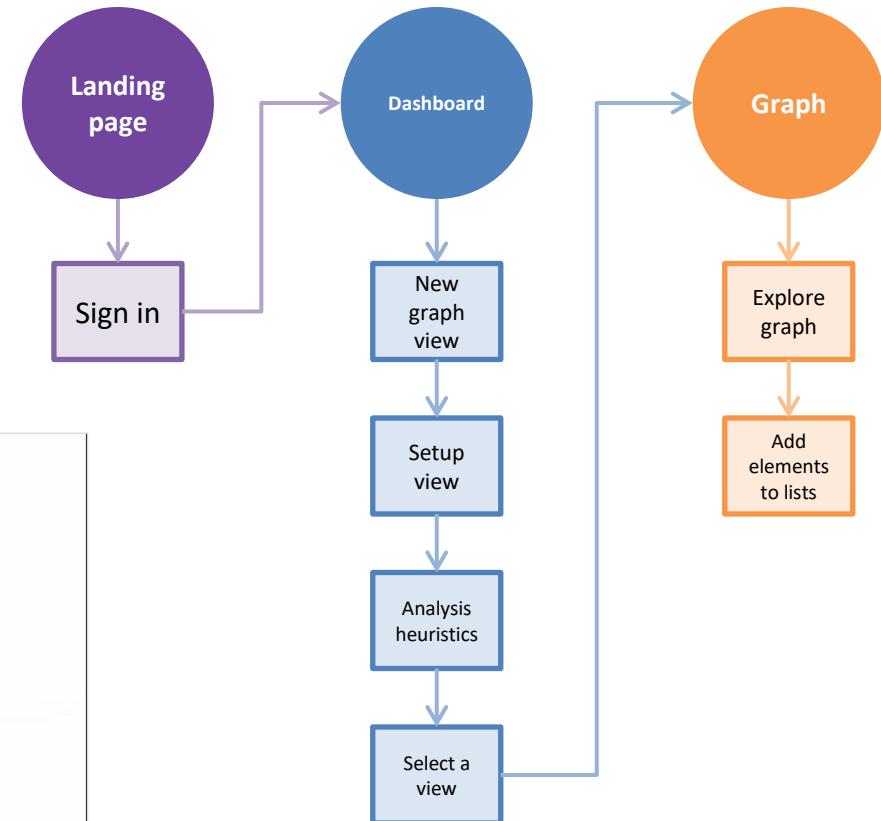
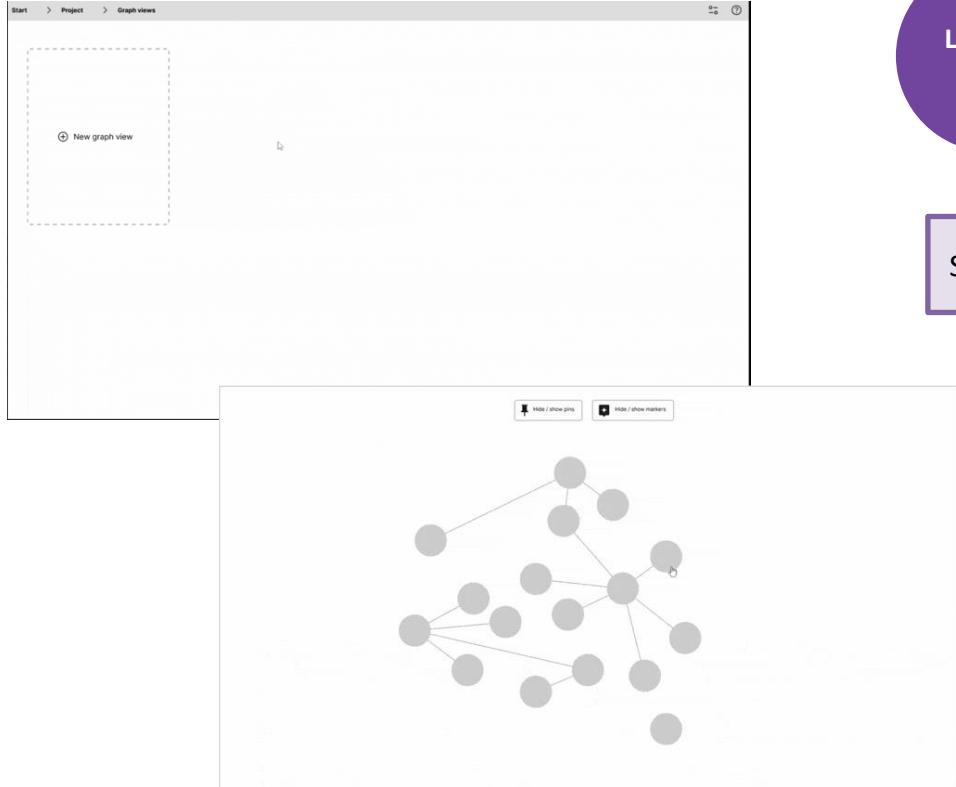
Importance (X axis) / difficulty (Y axis) matrix



Data viz application

User flow

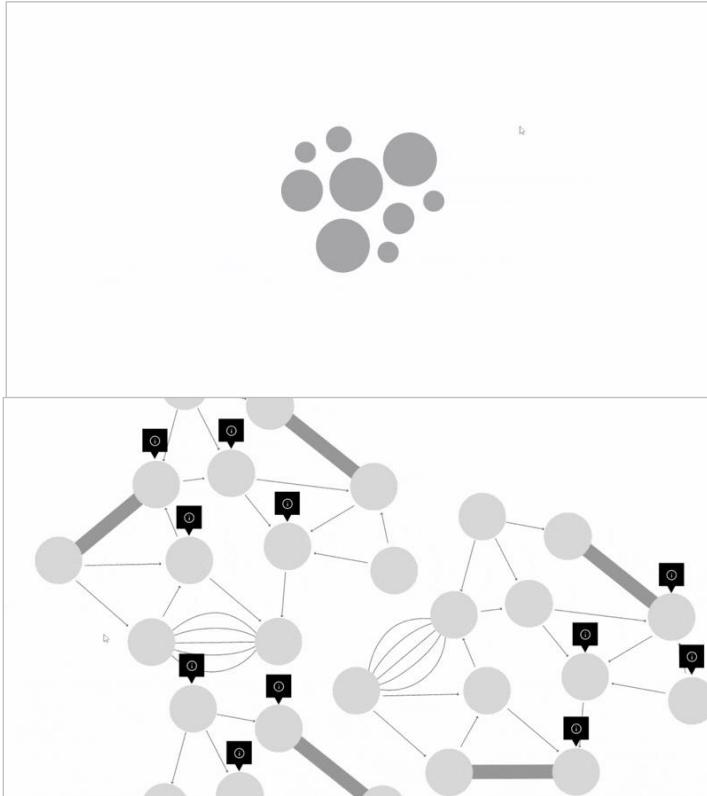
Lo-fi dashboard (top) and graph (bottom)



Data viz application

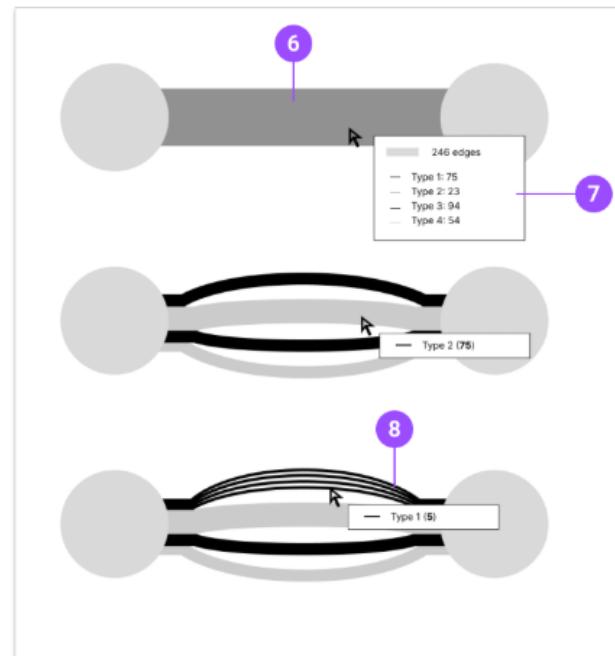
Graph UI ideation

Zoom/pan, edge groups, and marker clustering



- 6 To solve this problem, I represented large numbers of edges as a group, visually distinct from other single edges.
Through additional layers of interaction with the graph elements, users could reveal more information about this group.
- 7 Hovering or right clicking brings up a context menu, wherein users can choose to expand the edge group.
The same pattern of right clicking to access more actions, could be applied to groups of nodes as well.
- 8 Once expanded, users can see each edge type as part of the group. Initially we thought it made sense to allow users to continue expanding nested edge groups, but this was removed and simplified in a later design iteration.

Arbitrary edge counts



How & who

- Remote testing with internal SMEs, using Figma prototypes
 - (Devs rarely caught up to design)
- 5 SMEs, internal PM/management

The team determined the left nav drawer took up too much space.

The accordion styling of saved graph objects took up too much space.

We needed a way to indicate to the user hidden nodes were present, rather than requiring a right-click.

General graph markers added too much visual clutter when viewed over hundreds of nodes.

Floating buttons free up graph space, and offer more flexibility for adding additional menus.

Hidden nodes are now indicated clearly, and are accessible via simpler actions.

Updated compact accordion styling.

General graph markers are removed, and now only important data errors are visible via toggle.

Results

- Iterative updates to dashboard and graph UI
- Refined representations of MVP features

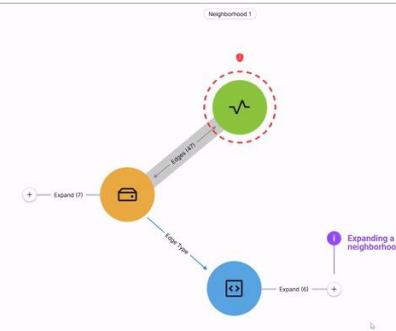
Data viz application

Final deliverables

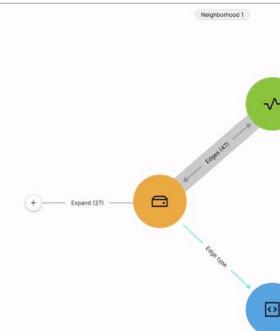
Search & lists



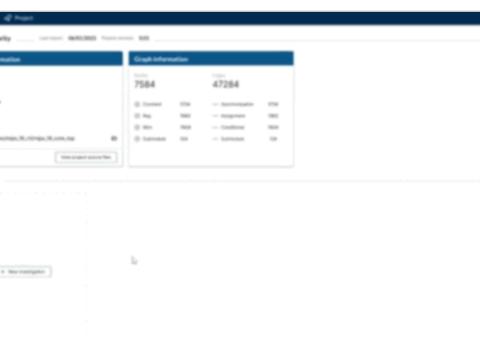
Expanding neighborhoods



Options menu & tabs



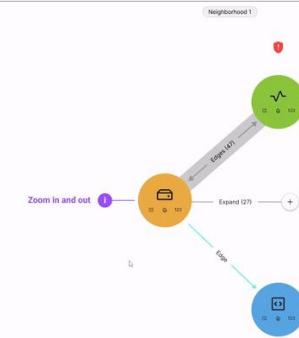
Dashboard (blurred)



Marketing animation



Icon zoom



Mini retro

- Lessons learned
 - Communicating with technical experts
 - Dealing with scope creep
 - Demo and marketing voiceovers / animation
- Do anything differently?
 - More robust testing (NDA issues?)
 - Look into 3D representations of layered data

Thank you!