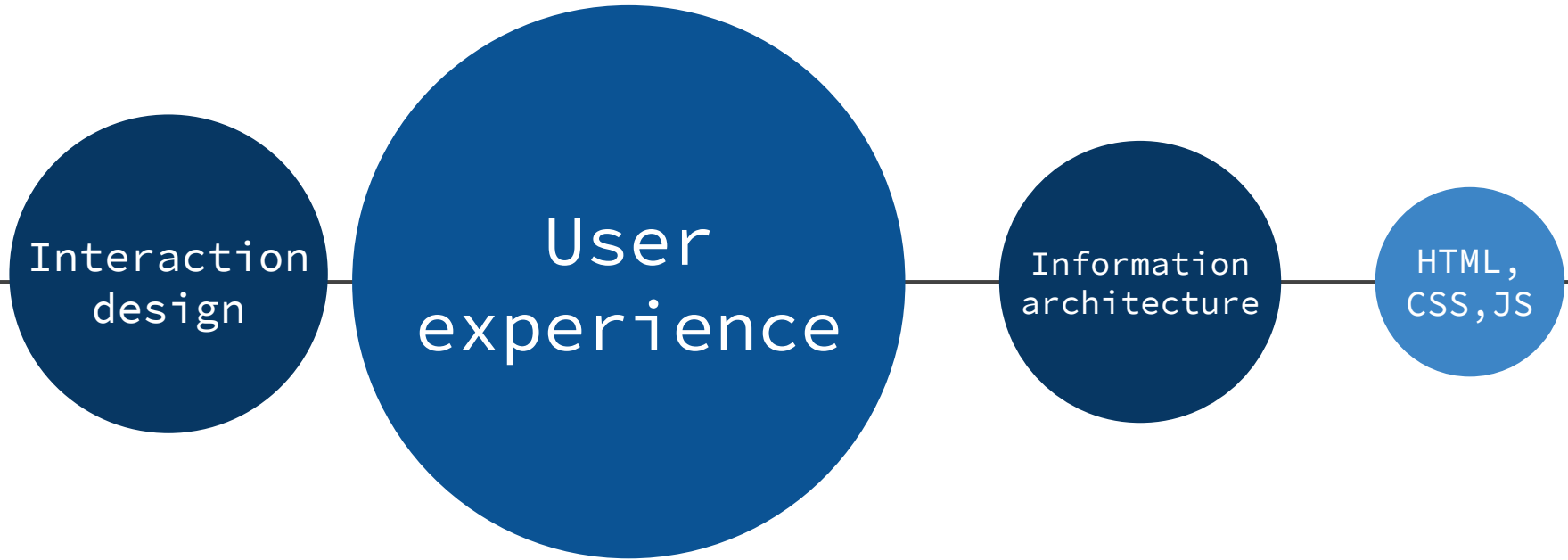


Ray Sabolich

User Experience Design Engineer

Skills & Expertise



UX Process

Design Process

Discover

Frame the problem and create a plan to solve it.

Research

Observe and understand the users needs and evaluate their systems to inform the design.

Conceptualize

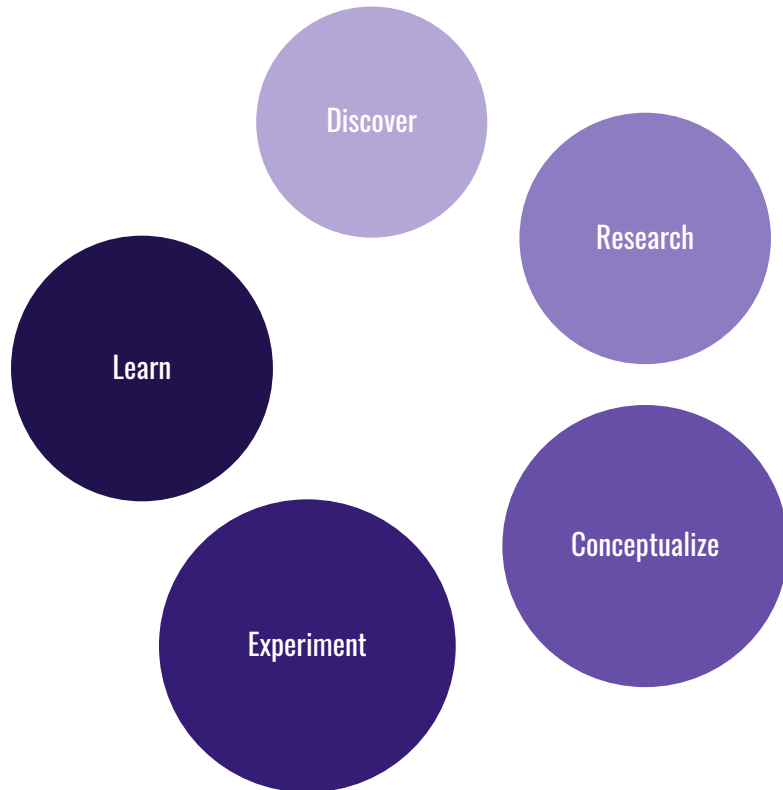
Understand the user goals and patterns, then brainstorm and ideate.

Experiment

Sketch, Mock-Up, or Prototype a design to test.

Learn

Test your design and evaluate.



Design Process

Discover

Frame the problem and create a plan to solve it.

Methods

- Starter/Problem Statement
- Assumptions/Plan for Solving



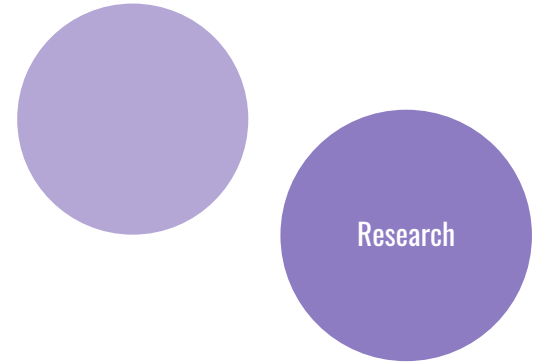
Design Process

Research

Observe and understand the users needs and evaluate their systems to inform the design.

Methods

- Quantitative
 - Competitor/Market Analysis
 - Analytics/Review
- Qualitative
 - Persona
 - User Interviews and Surveys
 - Use the application
 - Field Research of user tasks and goals
 - Heuristic Review
 - System Usability Scale



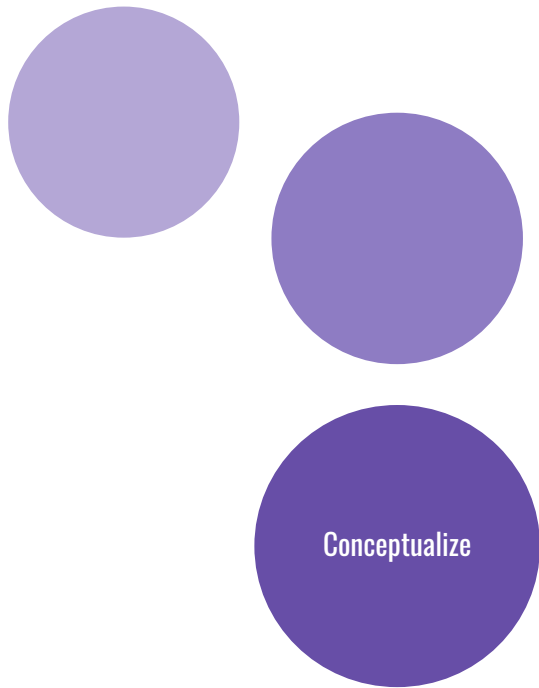
Design Process

Conceptualize

Understand the user goals and patterns, then brainstorm and ideate.

Methods

- Use Case / Task Flow
- Customer Journey / Experience Diagram (Goal Oriented – William Hudson)
- Information Architecture
 - Affinity Diagram
 - Card Sort
 - Site Map
 - UI Hierarchy
- Story Board
- Schematic Diagram/Sketch
- How are others solving the problem
- Hypothesize how the idea will solve the problem



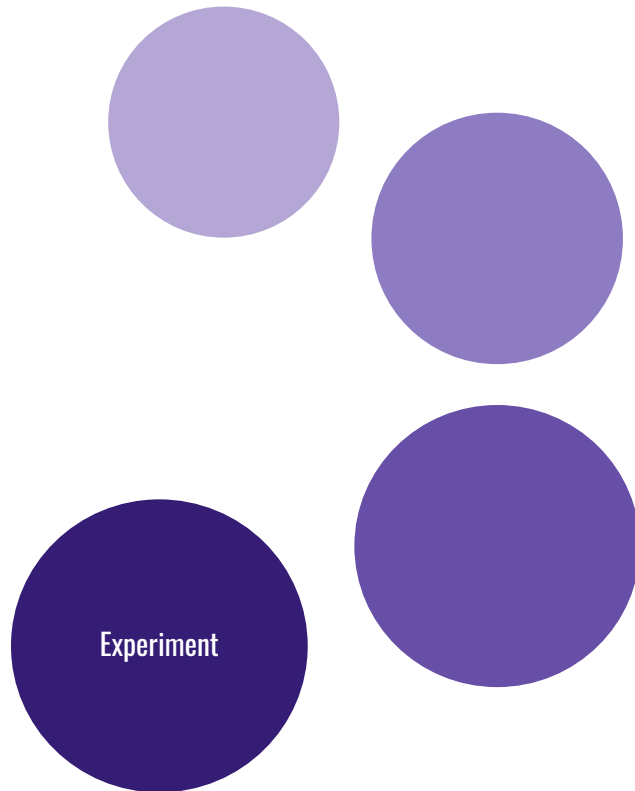
Design Process

Experiment

Sketch, Mock-Up, or Prototype a design to test.

Methods

- Design
 - Wireframe (Paper, whiteboard, electronic)
- Prototype
 - Interactive Mock-up
 - HTML/CSS



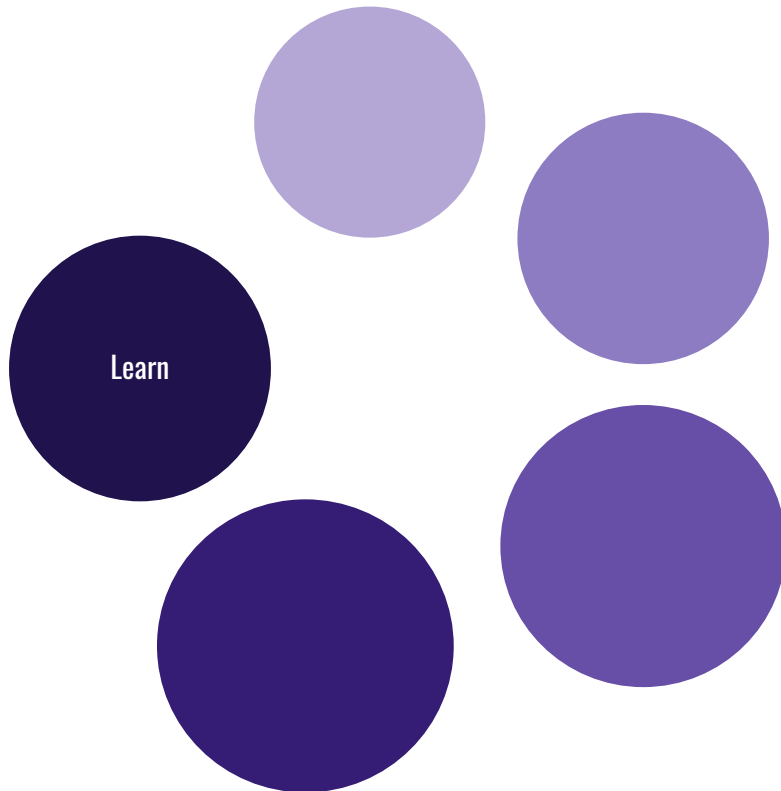
Design Process

Learn

Test your design and evaluate.

Methods

- Test
 - Survey
 - Think-Aloud Testing
 - Usability Test
 - System Usability Scale
 - A/B Test
 - Analytics Review (Crazy Egg, Google)
 - Tree Test (Navigation)
- Evaluate Results
 - Positives
 - Negatives
- Decide to iterate, pivot, or abandon



Portfolio Samples

Gateway Health

Member Profile

Several applications were being used to service customers daily.

Frustrating both the patients and the provider, users had to remember patients details while trying to communicate across departments.

Gateway Health.

Name + DOB - John Doe 02/11/1974

GL GN Logout

Member Profile

Results

Name ↓	Member ID ↓	Date of Birth	Address	Phone	Plan	Status
John Doe	12345678	02/11/74	605 Hamilton ...	(412) 555-5555	MAPA	Enrolled
John Doe	23456789	102 Penn Ave. Pittsburgh, PA 15206	102 Penn ...	(412) 555-5155	MPPA	Enrolled
John Doe	34567890		902 Braddock ...	(412) 555-1234	CLPA	Disenrolled
John Doe	45678901	02/11/74	345 McKinnon ...	(412) 555-5678	CHPA	Enrolled
John Doe	56789012	02/11/74	725 7th Ave ...	(412) 555-6789	QDQH	Enrolled
John Doe	67890123	02/11/74	816 Mentor ...	(412) 555-7890	QPOH	Disenrolled
John Doe	89012345	02/11/74	522 Forbes ...	(412) 555-8901	QLOH	Enrolled
John Doe	90123456	02/11/74	665 Murray ...	(412) 555-9012	MAPA	Enrolled

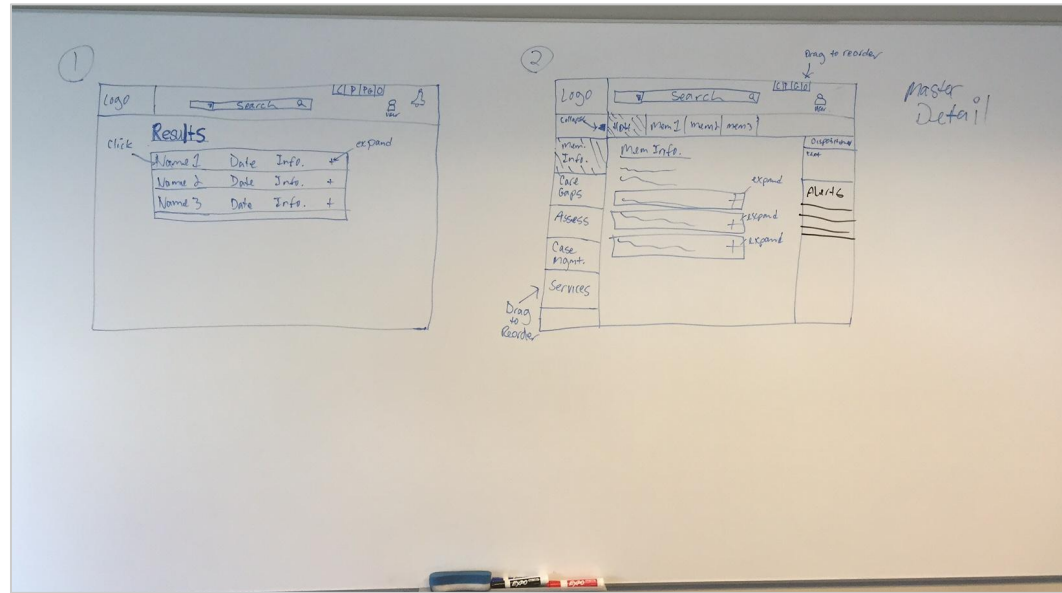
Gateway Health

Member Profile

— — —

We learned that the user's had to remember too many patient details and that they weren't communicating the patients needs when transferring them between departments.

We used this qualitative data to create whiteboard wireframes which allowed us to design quickly and remain agile.



Gateway Health

Member Profile - Result

Several applications became a single page application that aggregated all of the important features for patient management.

The design led to a more enjoyable experience for the patient and the many Gateway Health departments. It was also adopted by Highmark.

Gateway Health.

Member ID+ Search...

GL GN Logout

Member Profile

John Doe Jane Doe John Doe Jr

Information

Care Gap

Case Management

Services

Preferences

Information

Name	Address	Member ID	Member LOB	Coverage Effective	Coverage End
John Doe	1234 Penn Ave Pittsburgh, Pa 15221 Allegheny	12345678	Health Plan	10/12/14	N/A
Status	HOH	Case #			
Enrolled	Yes	1234567			

Contact

Phone	E-mail	Alt Address
H 412-555-5155	P JDoe@email.com	1234 Address
W 412-555-5154	A AltJD@email.com	Pittsburgh, PA
A 412-555-5155		15221

PCP

Name	Address	ID	Specialty
Dr. William Pope	567 Stanwix Ave Pittsburgh, PA 15221	123456	Internal Medicine
Phone	Fax	Lab	
412-555-5150	412-555-5655	Quest Diagnostics	

Prev Plans

Biography

Gender	D.O.B.	Ethnicity
Male	02/11/74	Caucasian
Region	Language	Death Date
Northeast	English	N/A

Alerts

Care Gaps

Appointments

Lock-in

Conduct

History

Gateway Health

Member Profile - Final

We tested the application with the stakeholders as we iterated.

We **estimated** at least a 75% increase in communication and visibility.

Gateway Health.

Member ID* Search...

GL GN Logout

Member Profile

John Doe

18+ Jane Doe

John Doe Jr

Information

Care Gap

Case Management

Services

Preferences

Care Gap

Name	Gender	Age	Screening	Last Screening	Last Interaction	Disposition	Appointments
John Doe	Male	41	<u>Colonoscopy</u>	03/11/14	01/07/14	Select	N/A
John Doe	Male	41	<u>Prostate</u>	02/11/14	01/01/14	Appointment	
John Doe	Male	41	<u>Blood Pressure</u>	01/12/14	01/07/14	Barriers	
John Doe Jr	Male	16	<u>Asthma</u>	01/12/14	01/07/14	Call back	
John Doe Jr	Male	16	<u>Allergy</u>	01/11/14	01/07/14	Declined	
John Doe	Male	41	<u>Blood Pressure</u>	02/11/13	02/11/13	Educated	
John Doe	Male	41	<u>Prostate</u>	02/11/13	02/11/13	No follow up	
John Doe Jr	Male	16	<u>Physical</u>	02/11/13	02/11/13	Transfer	

Contact type

Enter a comment...

Save Cancel

Alerts

Notifications

Appointments

Lock-in

Conduct

History

Appointment

Barriers

Call back

Declined

Educated

No follow up

Transfer

Exclusion

Appointment

Barrier

Declined

Issue

Provider access

Transportation

Child care

Language / Literacy

Socio economic

Physically impaired

Solution

Provider info given

Educated on trans

Community repos

Language line

Appointment

OK

Cancel


Highmark

PDN Home Services

There was a need for an electronic medical form by healthcare providers for private duty nurses. We did not have access to the end users (doctors and nurses) to understand their needs.

A unique solution was needed, so we created personas and traced the users steps to solve the problem.

Health Options



Highmark Blue Cross Blue Shield Delaware

Allegheny Valley Hospital
NPI # 1234567890

Status

Request

Forms

Pre-authorization Request

Standard*

Member Information

Member ID	Full Name	Date of Birth	Gender
0123456777	John Smith	12/12/1982	Male

Select Authorization Form

All fields are required unless otherwise noted

Servicing Provider NPI #

1000024

Attending Provider NPI #

1000024

Does this member have any other insurance?

☐ Yes ☒ No

Treatment Type

☐ Inpatient ☒ Outpatient

Highmark

PDN Home Services

— — —

We first created personas of doctors, nurses, and office assistants, then created doctor's forms with paper and a clipboard to emulate how the form would be filled out.




Highmark

PDN Home Services - Result

The navigation at the top changed with each section of the form. Clicking the up arrow or using the navigation brought you to the section.

There were up and down arrows to allow sections to be skipped within a long scroll.

Sections were show/hide based on response to save space.

Health Options 
Highmark Blue Cross Blue Shield Delaware

Allegheny Valley Hospital
NPI # 1234567890

Forms **Diagnosis** Treatment Attachment(s)

PDN - Private Duty Home Services Request

Member Information

Member ID	Full Name	Date of Birth	Gender
0123456777	John Smith	12/12/1982	Male

Diagnosis Information

All fields are required unless otherwise noted

Request Type

Change in shift Care Services ▼

Authorization Number

Primary Diagnosis code

Type in code or keyword...

+ Add another

PDN Home Services - Final

We tested the developed prototype with the internal team (Product, Development, QA) and iterated.

[illegible]

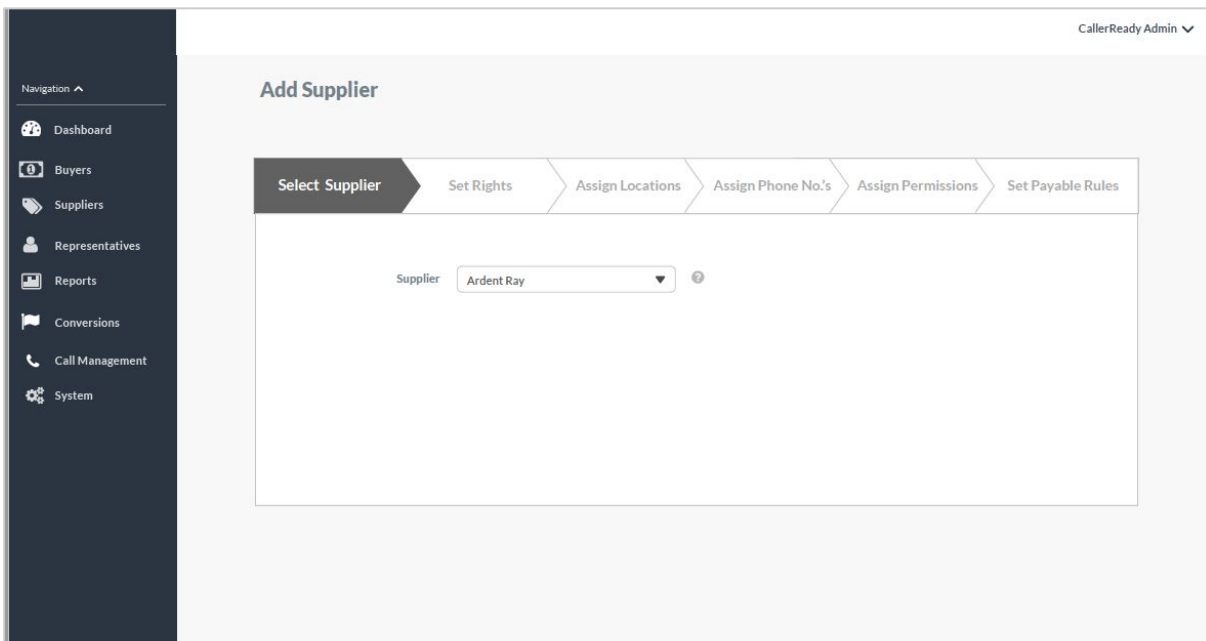
Caller Ready

Supply Manager

— — —

An application that was fragmented with separate pages for like content.

We created a user task flow, then paper-sketched the design to create a wizard that simplified the process.



Caller Ready

Supply Manager

When a supplier is selected, buttons are displayed and enabled to guide the user through the process and reduce errors.

Navigation ^

Dashboard

Buyers

Suppliers

Representatives

Reports

Conversions

Call Management

System

CallerReady Admin

Add Supplier

Select Supplier

Set Rights

Assign Locations

Assign Phone No.'s

Assign Permissions

Set Payable Rules

Supplier

Ardent Ray

Q

Alabaster

Behemoth

Capricorn

Domicles

Cancel

Continue

Caller Ready

Supply Manager - Results

The wizard aggregates the separate forms that were necessary to add a supplier.

The navigation now displays clear, sequential steps to complete the process.

Navigation ^

Dashboard

Buyers

Suppliers

Representatives

Reports

Conversions

Call Management

System

CallerReady Admin

Add Supplier

Select Supplier

Set Rights

Assign Locations

Assign Phone No.'s

Assign Permissions

Set Payable Rules

Account locked

Admin access

Admin type

Reporting access

CRM access

Recording access

Conference Monitor access

Mask buyer name

Active

Pay Per Call

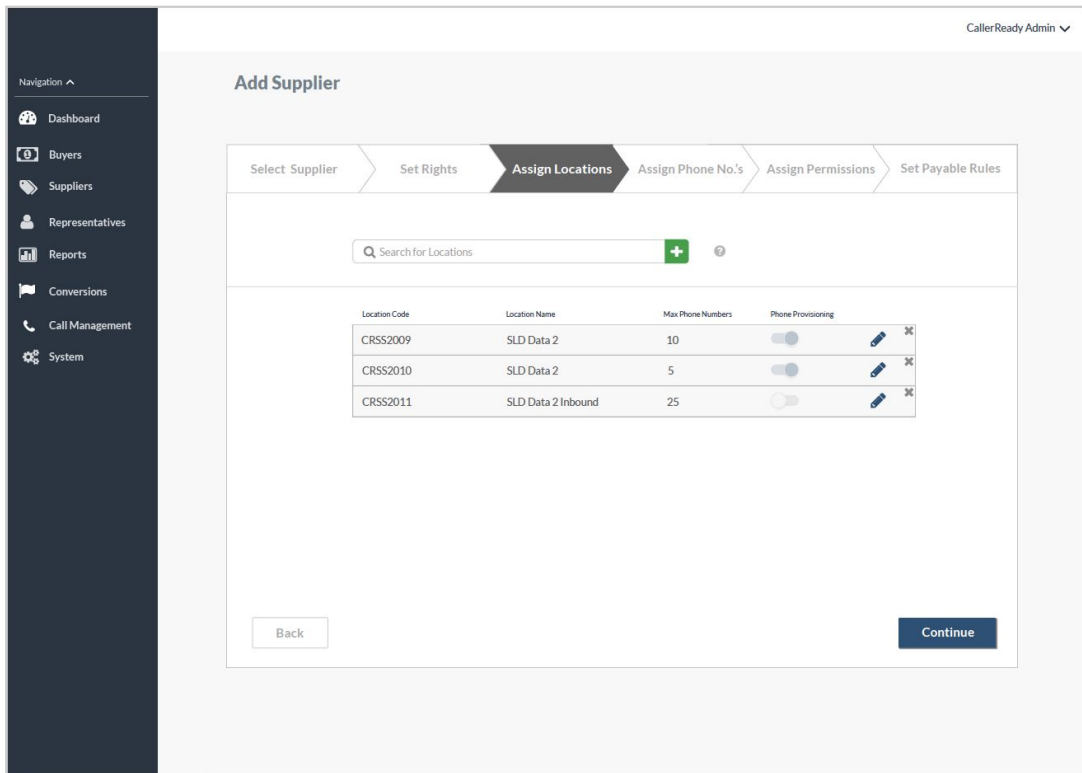
Back

Continue

Caller Ready

Supply Manager - Final

We tested this design with the clients and received direct feedback for iteration.

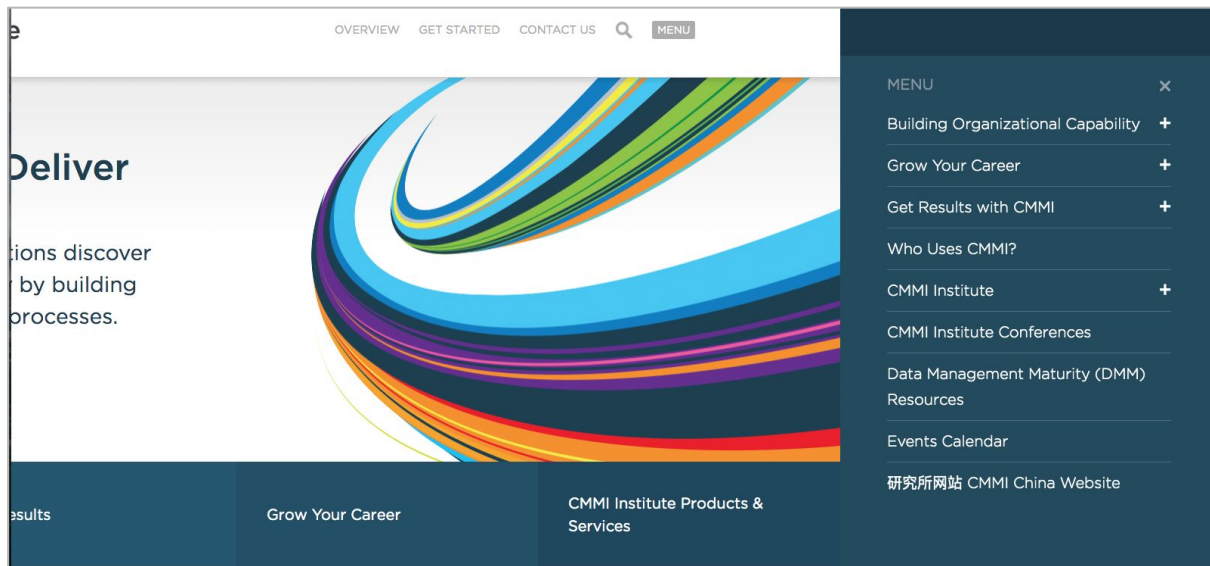


CMMI Institute

Site Redesign

— — —

An overly simplistic site that was difficult for users to navigate and find information.



CMMI Institute

Site Redesign

— — —

We started with interviews of users and gathered feedback from a diverse group. The main obstacle for many was having to “Google” information to find a page on the site.

Interview Questions for General Users.

Do not assist the user in giving answers. Give them an opportunity to answer and listen intently.

Objectives:

Context – What are the goals?

Workflow – How do you reach your goals?

Feature / Opportunity – How can we make it better?

Line of Questioning

Ex: Why do you use a direct URL? Because it is easier.

Have you used the CMMI site for this? No.

Why not?

Or What makes this difficult, etc?

Problem Statement: Why are user's not completing tasks/ using the CMMI site?

Introduction: Hi, I am _____. Thank you for your time. Do you mind if I ask you some questions about how you use the CMMI site. This should only take a short time to complete. Do you mind if we continue with our questions?

Do you have any questions?

Great, let's get started!

1. How do you currently use the CMMI site?

CMMI Institute

Site Redesign

Creating personas helped to determine how the site would be used by the different users.

Xtensio > CMMI Website Personas

BM GP SW +2


Upgrade RS

Last Saved: Apr 27, 2017 12:30 PM

Preview

+ Add

Bill Lawrence



Loyal Intelligent Confident

Budget minded Honest

Goals

- Advance in career
- Learning new skills for himself and his company
- A nest egg for retirement
- Provide for his children's college fund

Frustrations

- Has multiple certifications to choose from
- Unfamiliar with the value of the CMMI
- Unable to easily find what the CMMI is
- Has a limited budget

Bio

Bill has an MIS Degree from Ohio State with 8 years of experience in Information Technology. He currently works for Progressive Insurance which is an ISO 9000 company.


Bill enjoys spending time with his family and trail running.

"I don't have time to figure out the path of least resistance."

Age: 41
Work: Program Manager
Family: Married, kids
Location: Colorado Springs, CO
Character: Ambitious

Motivation

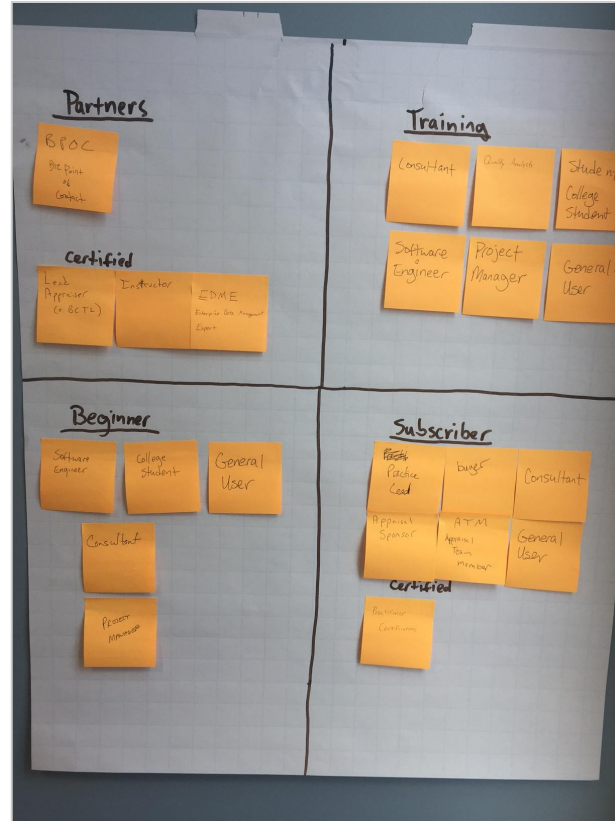
Incentive	<div></div>
Achievement	<div></div>
Growth	<div></div>
Power	<div></div>
Social	<div></div>



CMMI Institute

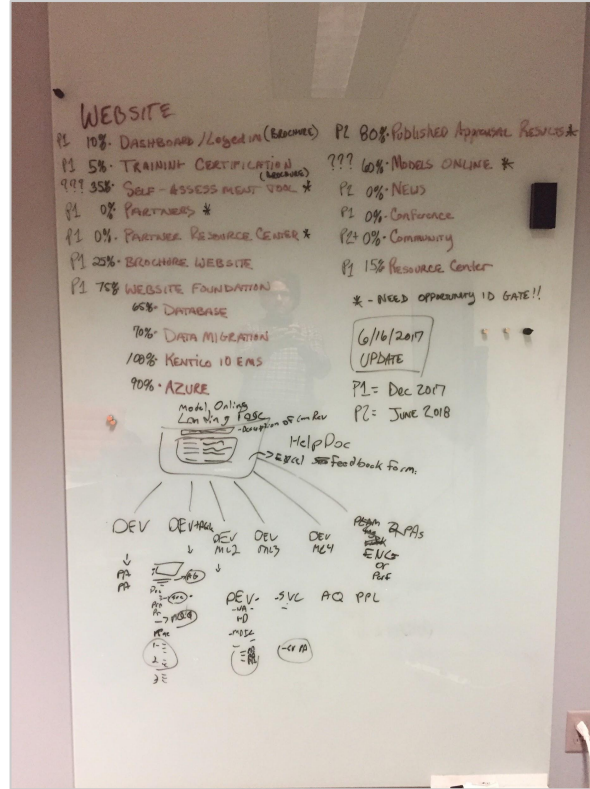
Site Redesign

We created affinity maps to group the users by their roles and understand how they use the site.



Site Redesign

We looked at Google analytics to determine what pages were most important and which had the largest drop off rates.



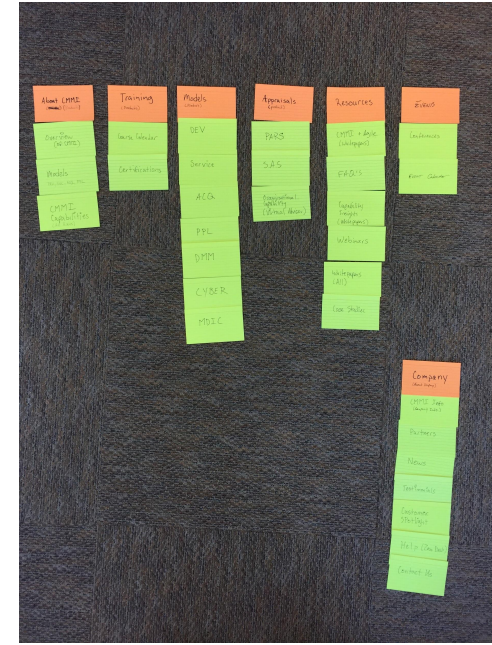
CMMI Institute

Site Redesign

We did a site audit of all pages to find the redundancies and determine where we could create a proper information architecture.

We were able to reduce the pages from four levels to two or three at maximum and simplify the navigation.

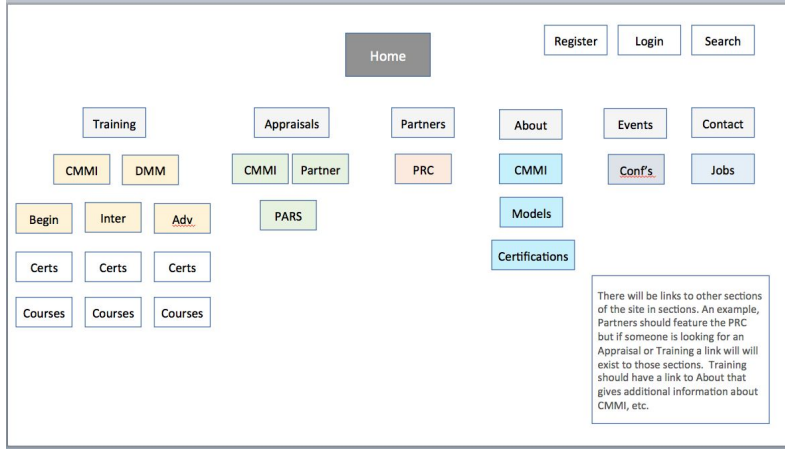
	A	B	C	D	E	F
1		Top Level	2nd Level	3rd Level	4th Level	5th Level
2						
3		Home Nav				
4						
5		Overview	About CMMI	Current Job Postings Become A Partner	Becoming a Partner (Partners Site)	
6						
7						
8						
9		Get Started	Building Organizational Capability	Assess Your Organization Capability		
10				Who Uses CMMI?	Published Appraisals Results Directory (PARS)	
11				Project and Work Management	Assess Your Organization Capability (Virtual Advisor)	
12				Supporting Infrastructure	Assess Your Organization Capability (Virtual Advisor)	
13				Product Engineering and Development	Assess Your Organization Capability (Virtual Advisor)	
14				Supplier Management	Assess Your Organization Capability (Virtual Advisor)	
15				Process Management	Assess Your Organization Capability (Virtual Advisor)	
16				People Management	Assess Your Organization Capability (Virtual Advisor)	
17				Service Delivery and Management	Assess Your Organization Capability (Virtual Advisor)	
18				Data Management	Assess Your Organization Capability (Virtual Advisor)	
19				Assess Your Organizational Capability now (Virtual Advisor)	Assess Your Organization Capability (Virtual Advisor)	
20						
21				Big Data, Big Decisions (WhitePaper)		
22				Spotting Holes in Your Customer Service (WhitePaper)		
23				The Fast Lane (WhitePaper)		
24						
25			Grow Your Career	Training (Courses)		
26				Certification		
27						
28				Find Training (Courses)		
29				Earn a Certification		
30				Access the CMMI Models	CMMI Models (Book Downloads)	
31				Search CMMI Resources (Resource List)		
32				Developing Your Personal Brand (WhitePaper)		
33						
34				Build a Future in Big Data (WhitePaper)		
35				Snap Out of a Career Slump (WhitePaper)		
36				Working in International Teams (WhitePaper)		
37						
38				Get Results	Assess your organization's capability (Virtual Advisor)	



Site Redesign

Task workflows were used to understand the users goals.

Card Sorts were used to create a new navigation for the site.



Site Redesign

We created a new site map based on the site audit.

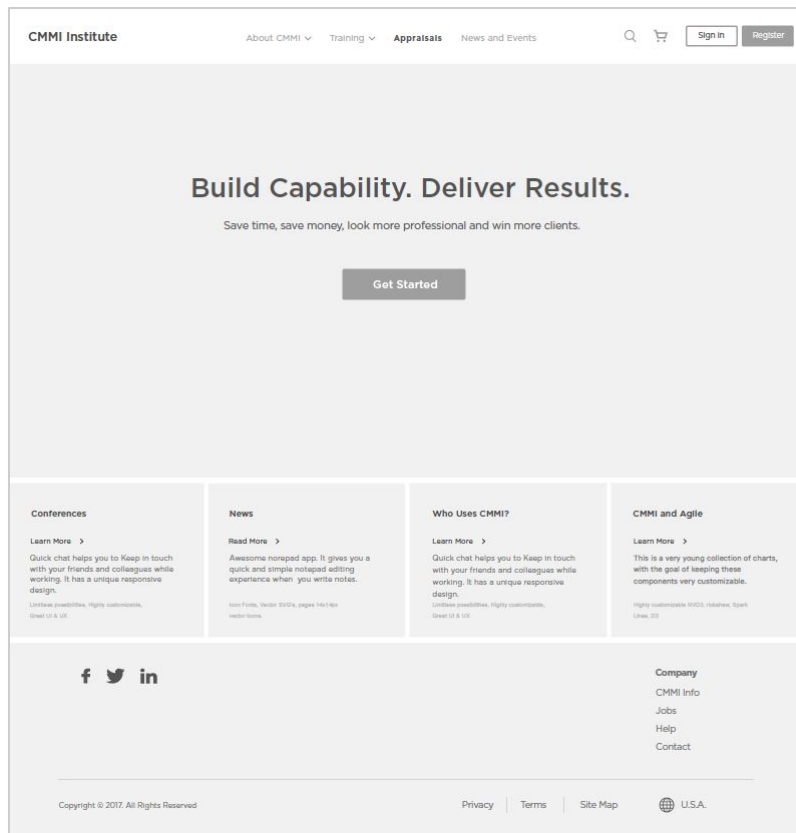
Paper prototypes were used to lay out the application and design simple interactions.

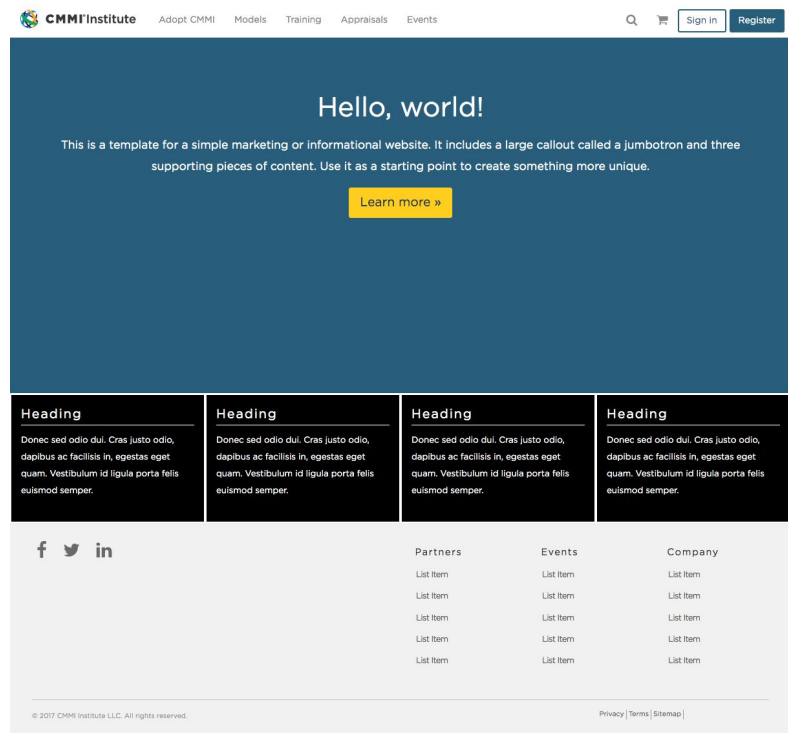
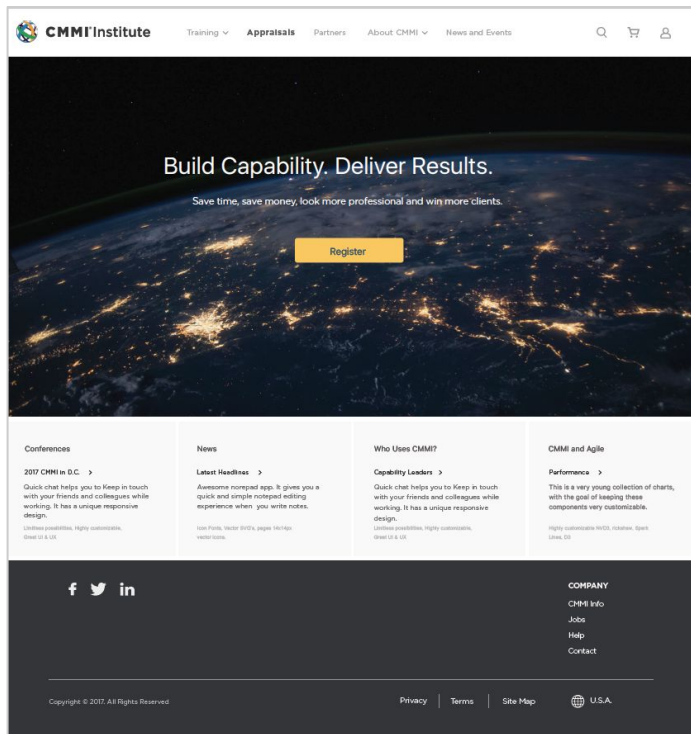
CMMI Institute

Site Redesign

Wireframes were created for the new layout and navigation.

We used a twelve point grid to design with custom breakpoints for larger screens.





Site Redesign

There were several design mock-ups created and one was chosen.

Pure CSS and Bootstrap were used to create prototypes that were later moved into the content management system.

CMMI Institute

Site Redesign

The site was designed
responsively for desktop,
tablet, and mobile.

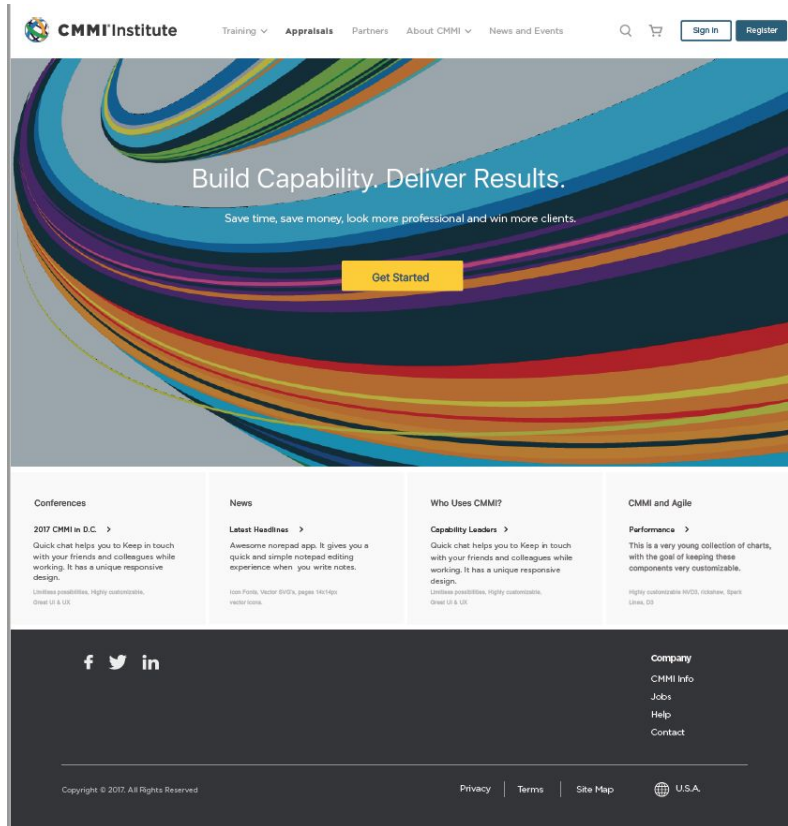


CMMI Institute

Site Redesign - Results

The navigation went from obscure phrases to groups of products that were ordered by user priority.

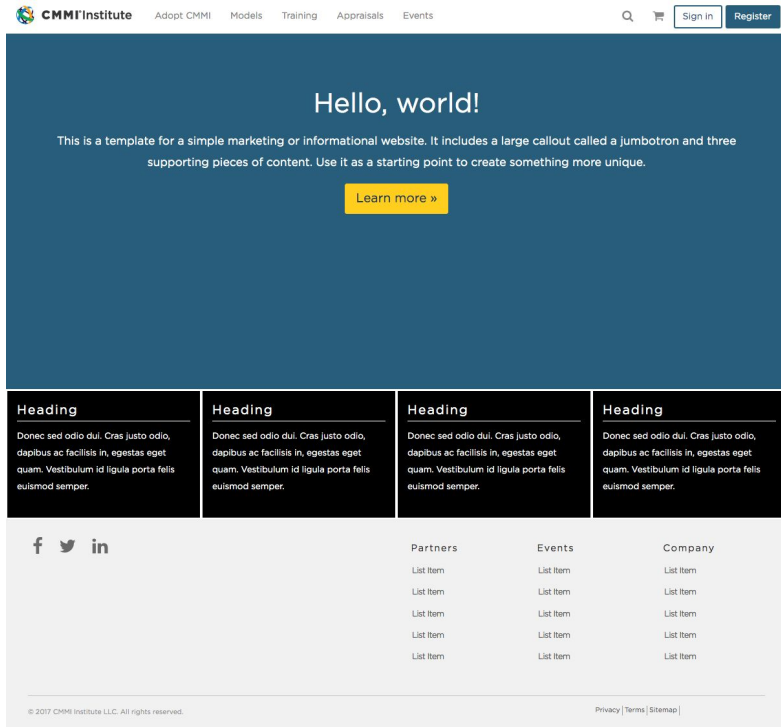
By testing with users, we were able to create a more lightweight information architecture which led to finding content on the site much easier.



CMMI Institute

Site Redesign - Final

We began developing the site in Kentico and testing internally and with our external users.



PNC

CIH Redesign

A necessity to move a legacy Lotus Notes application into the cloud.

With tight time constraints, we used Lean UX to create a full application in 90 days.

PNC

Customer Information Hotline

Requests

Assigned 5

Unassigned 24

View All

Forms

Search...

Q

Assigned

Requestor

	First	Last Name	Status
<input type="checkbox"/>	Mary	Boo	Open
<input type="checkbox"/>	James	Brown	Pending
<input type="checkbox"/>	Thomas	Mooray	Closed
<input type="checkbox"/>	Frank	Moran	Open

PNC

CIH Redesign

— — —

We started with a starter statement and made several assumptions about the application which eventually turned into the hypothesis.

We interviewed users to see how they used the system and what they liked and disliked about it.

We had weekly scrums to flesh out the details with BA's, Development, and UX.

“How might we create a new system that is a single point for users to service their customers. The system should increase the amount of customers serviced by 10% within the first quarter.”

PNC

CIH Redesign

We sketched designs first, then created wireframes in PowerPoint to rapidly prototype and test the concepts.

We used a usability test with the user walking through the prototype and iterated from there.

PNC

Customer Information Hotline

Select a request

Power ID

Login ID

1234567

Officer ID

51501

Employee Name

John Smith

Phone #

412-555-5555

Officer Corrections

Select Officer(s)

Officer 1

Officer 2

Officer 3

Officer 4

Officer 5

Cancel

Send Request

Employee Name
John Smith

Phone #
412-555-5555

Choose the form(s) to complete

Customer Name

Search for Power ID

Power ID ▾ Search...

Power ID Number

New Power ID Name

CIF Key (optional)

Additional Comments

Address

Tax ID

Customer Type

NAICS

NPR

Stock ID

Phone #
412-555-5555

Choose the form(s) to complete

Customer Name

Address

First Name Last Name

Jane Smith

Address

123 Smithfield St

City State Zip Code

Pittsburgh PA 15221

Country Code

Select..

CIF Key (optional)

Additional Comments

Tax ID

Customer Type

NAICS

NPR

Stock ID

CIH Redesign

Users needed to fill out several forms for one customer. So we created expandable/collapsible form sections.

The section titles and icons turned to gold when content was entered, which became the users favorite feature.

PNC

CIH Redesign - Results

— — —

The usability tests reduced the amount of iterations and put us on the right path quickly.

We found a Bootstrap template for the developers to use on the front end and the deadline was achieved for the rebuild of the application.

PNC

Customer Information Hotline

Select a request

Power ID

Login ID

1234567

Officer ID

51501

Employee Name

John Smith

Phone #

412-555-5555

Officer Corrections

Select Officer(s)

Officer 1

Officer 2

Officer 3

Officer 4

Officer 5

Cancel

Send Request

PNC

CIH Redesign - Final

— — —

We were able to create an MVP that met expectations.

I was not with the company to verify the 10% increase in productivity.

Choose the form(s) to complete

Customer Name

Address

First Name

Last Name

Jane

Smith

Address

123 Smithfield St

City

State

Zip Code

Pittsburgh

PA

15221

Country Code

Select..

CIK Key (optional)

Additional Comments

Tax ID

+

Customer Type

+

NAICS

+

NPR

+

Stock ID

+

McKesson

CPS Redesign

The integrated Clinical Programs Solution application needed to become more consistent, updated, and white-labeled.

We decided that due to the repetition and consistency of the redesign, a design system would help us achieve our goals faster.

Clinical Programs Task Queue - McKesson EnterpriseRx

File Activities Tools Rx Queues Search Administration Help

Filter Tasks By:

Program Program Name	Patient Last Name, First Name	Severity Message Severity	Type Message Type
Date/Time Date/Time - DD/MM/CC	DOB DOB - DD/MM/CCYY	Status Message Status	Due Due Date DD/MM/CCYY
Store Store Number	Phone Phone - (555)-555-5555	Message Message Text	Expires Expires DD/MM/CCYY

Reset Filter

Program	Message	Type	Severity	Received	Resolution	Patient	DOB	Phone	Store	Due	Expires
Therigy	Patient is Eligible for this Program. Ask the Patient if they want to Enroll.	Enrollment	High	02/20/2015	Open	Plastick, John W.	03/04/1987	412-474-1152	519	03/20/2015	03/20/2015
HeartCheck	Patient is Eligible for this Program. Ask the Patient if they want to Enroll.	Enrollment	High	02/20/2015	Open	Plastick, John W.	03/04/1987	412-474-1152	519	03/20/2015	03/20/2015
BreatheFree	Patient is	Enrollment	High	02/20/2015	Open	Plastick,	03/04/1987	412-	519	03/20/2015	03/20/2015

Close

d lamperskiA Store 519

McKesson

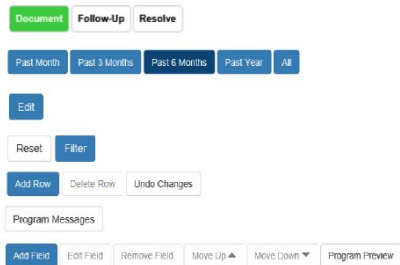
CPS Redesign

— — —

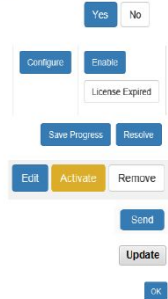
We conducted a UI audit by combining the best practices from EightShapes and Atomic Design methodologies. We also completed a Component Prioritization Worksheet to prioritize the components.

Buttons

Left Aligned



Right Aligned



- Primary and secondary buttons are inconsistent
- Some call to actions lack a secondary action – Edit, etc.
- Colors are inconsistent – green, blue, gold, - primary / white - secondary
- The sizes are inconsistent
- Some button groups have the secondary button first, and some have primary first.
- Two primary buttons without secondary – Save Progress, Resolve
- Buttons out of order – Activate – primary, Edit and Remove are secondary
- Some are capital case and some are sentence case

McKesson

CPS Redesign

— — —

The Product team approved the design system and we separated the parts into elements, components, patterns, and layouts.

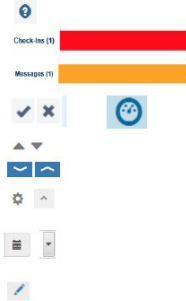
Insights were also added around design inconsistencies to target pain areas.

Icons

Static



Clickable



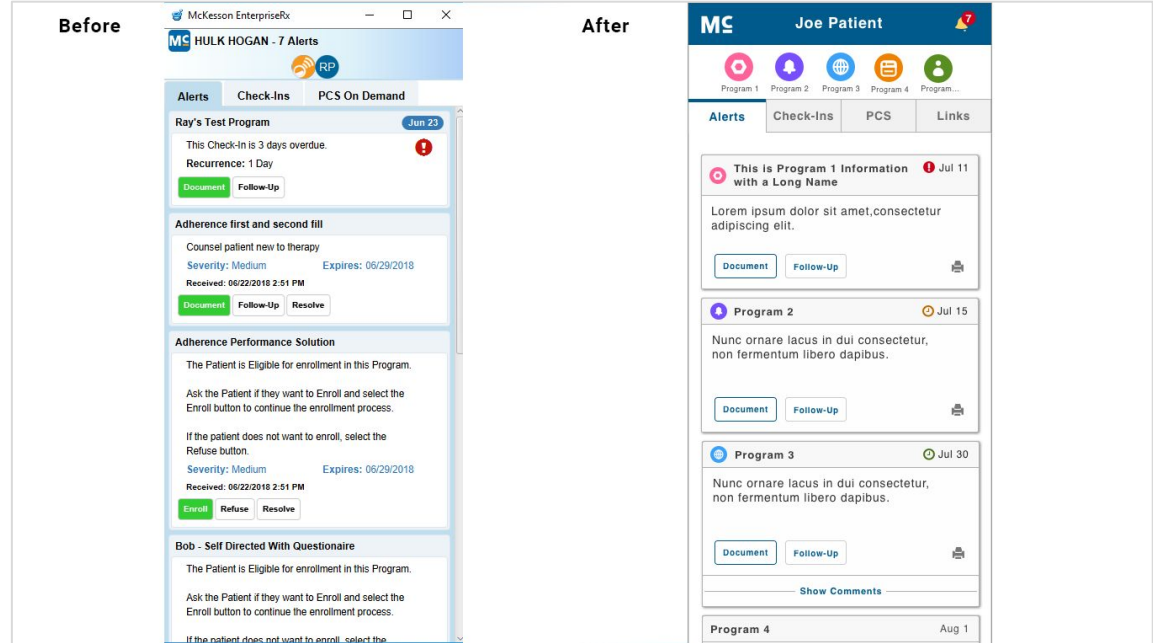
- Icons are clickable, except in the case of a placeholder or status
- Clickable icons that serve as buttons should have labels, some are fine w/out labels because of clear affordance – help, hamburger, etc
- Program icons lack context – should they be clickable?
- Same icon for different contexts – Enable and Disable Program (Warning)
- Icons have inconsistent look and feel – different icon styles
- Icons are flat
- Static icons would be more intuitive with a hover

McKesson

CPS Redesign

There were two views, a desktop and mobile view. Both used to accommodate space in the Pharmacy Management System.

There were six concepts and the team chose one.



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CPS Redesign

The desktop version had rows of filters and a table that lacked visual hierarchy.

We used whiteboard sessions to update the hierarchy of the interface.

Call-to-action buttons were moved from the left to right to accommodate small monitors. (Z to F pattern)

Clinical Programs Task Queue - McKesson EnterpriseRx

File Activities Tools Rx Queues Search Administration Help

Filter Tasks By:

Program: Program Name

Patient: Last Name, First Name

Severity: Message Severity

Type: Message Type

Date/Time: Date/Time - DD/MM/CC

DOB: DOB - DD/MM/CCYY

Status: Message Status

Due: Due Date DD/MM/CCYY

Store: Store Number

Phone: Phone - (555)-555-5555

Message: Message Text

Expires: Expires DD/MM/CCYY

Reset Filter

Program	Message	Type	Severity	Received	Resolution	Patient	DOB	Phone	Store	Due	Expires
Therigy	Patient is Eligible for this Program. Ask the Patient if they want to Enroll.	Enrollment	High	02/20/2015	Open	Plastick, John W.	03/04/1987	412-474-1152	519	03/20/2015	03/20/2015
HeartCheck	Patient is Eligible for this Program. Ask the Patient if they want to Enroll.	Enrollment	High	02/20/2015	Open	Plastick, John W.	03/04/1987	412-474-1152	519	03/20/2015	03/20/2015
BreatheFree	Patient is	Enrollment	High	02/20/2015	Open	Plastick,	03/04/1987	412-	519	03/20/2015	03/20/2015

Close

d lamperskia Store 519



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CPS Redesign - Results

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We came up with a design to reduce the redundancies and white label the application better.

The designs were tested in inVision with our customer and were considered “simplistic and elegant”.

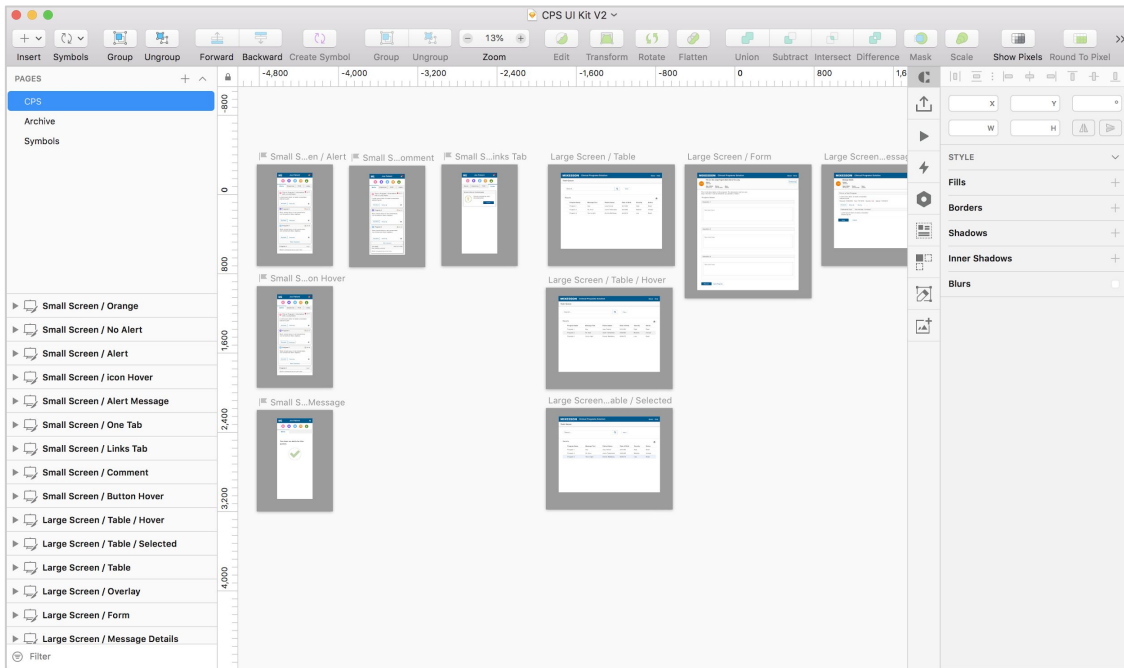
McKESSON Clinical Programs Solution						About	Help
Task Queue							
<input type="text" value="Search..."/>					<input type="button" value="Filters"/>		
Results							
Program Name	Message Text	Patient Name	Date of Birth	Severity	Status		
Program 1	Hey	Joey Fatone	02/10/84	High	Read		
Program 2	Ok, then	Justin Timberlake	03/03/85	Medium	Unread		
Program 3	You're right	Donnie Wahlberg	06/30/73	Low	Read		

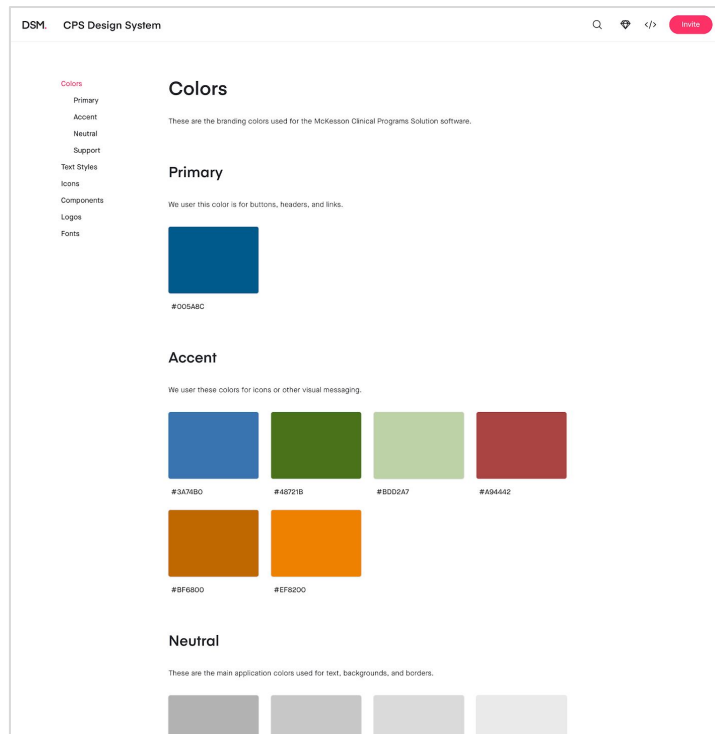
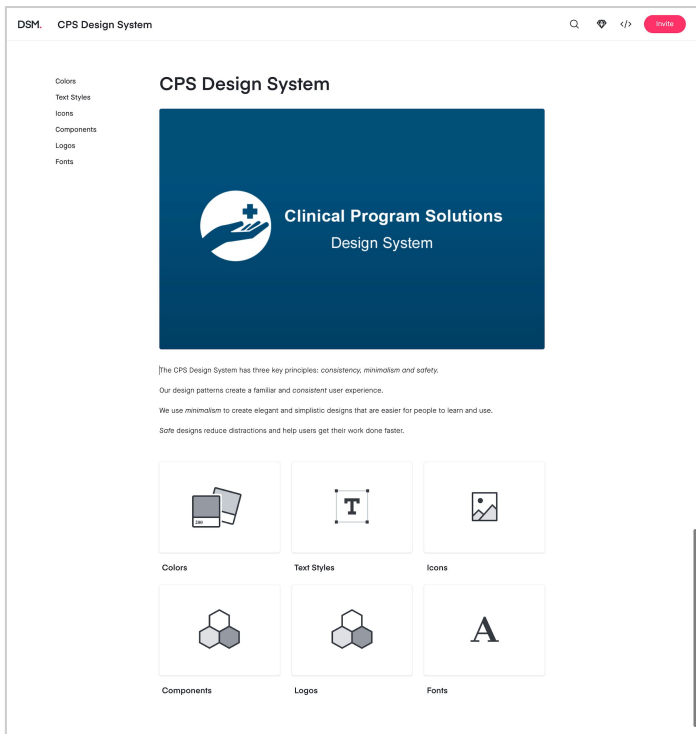
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CPS Redesign - Results

We created a UI Kit in Sketch App, while we iterated on prototypes.

We used Craft to upload the prototypes into inVision.





Site Redesign-Results

The CPS Design System was created in inVision while prototyping.

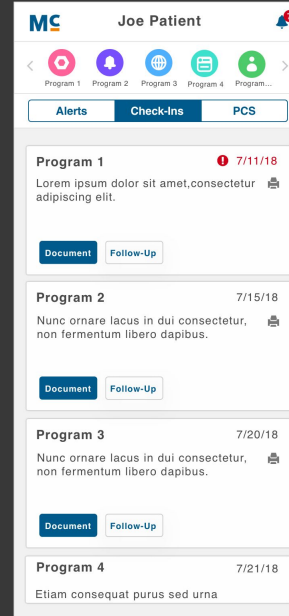
We began with the most important parts first - colors and buttons, and continued with text and other components.

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CPS Redesign - Final

— — —

The new designs were a team collaboration. The customers were happy with the new designs and we began working on a CPS in the cloud application.



Contact

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