Data Visualization Portfolio

Selected Works

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Contents

Case Studies

Military Reassignment Logistics | Telecom Fraud Detection

HOME SAFE

HomeSafe Alliance

Brief:

In an effort to modernize their operational tools, HSA requested a collection of Power BI dashboards to monitor military relocations and inform business decisions regarding scaling up. The dashboards are used by everyone from C-suite to entry level analysts.

Goals:

- Inform C-suite on key metrics at a Month-over-Month level
- Provide analysts granular insights to inform tactical, day to day decision making on where to allocate human resources

Outcome:

- Designed a custom suite of dashboards for executives and analysts to assess operational efficacy
- Drill through capability and intersection filtering added tools to unlock self service capability and retrieve deeper insights from data
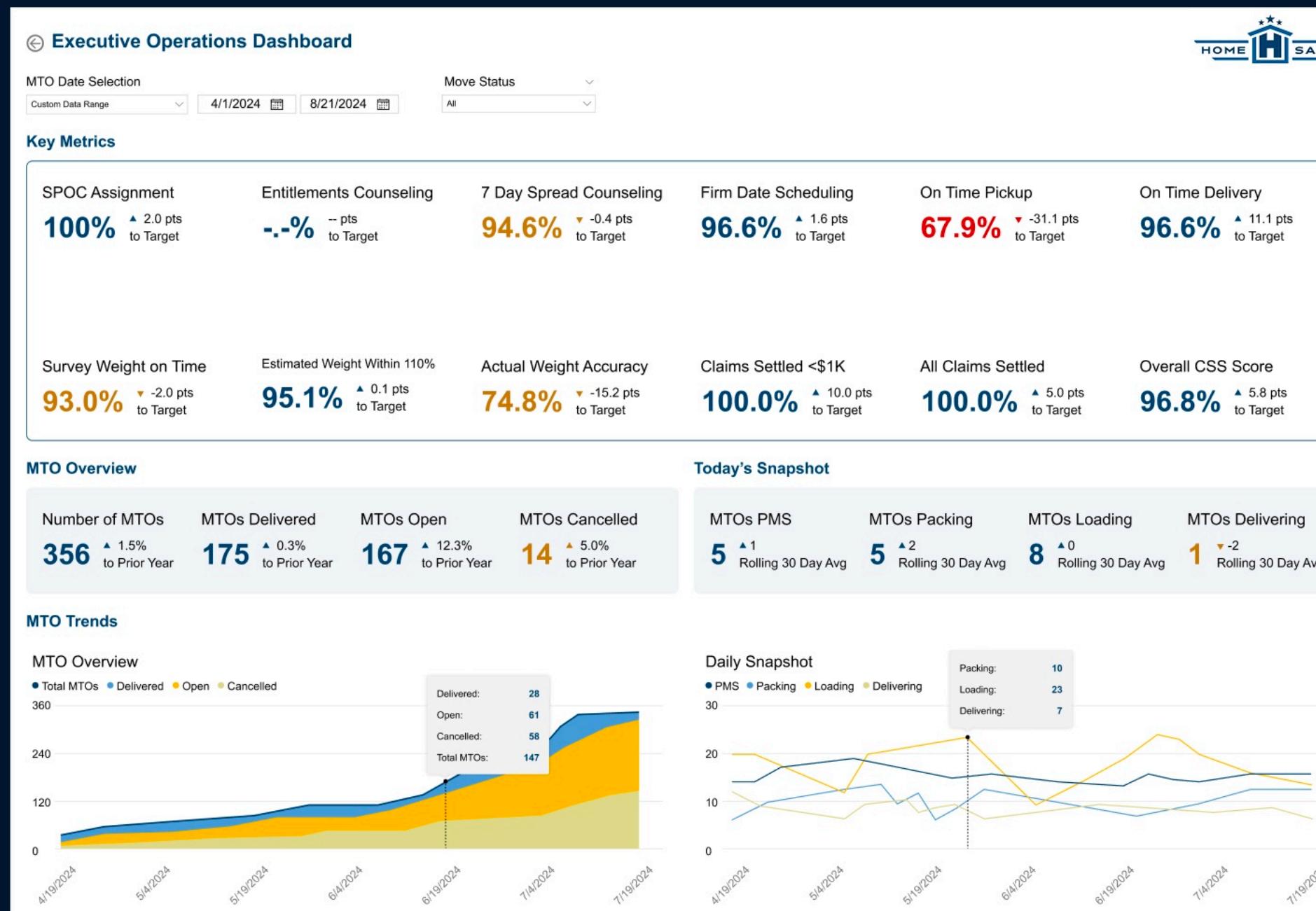
Deliverable

Bespoke executive level dashboard to view key metrics and trends at a glance.

Informs where deeper dives are necessary.

Deliverable

One of several pages designed for analysts to perform a deep dive on metric trends.

Goals of these pages included supplying capabilities to answer questions from the executive level dashboard.

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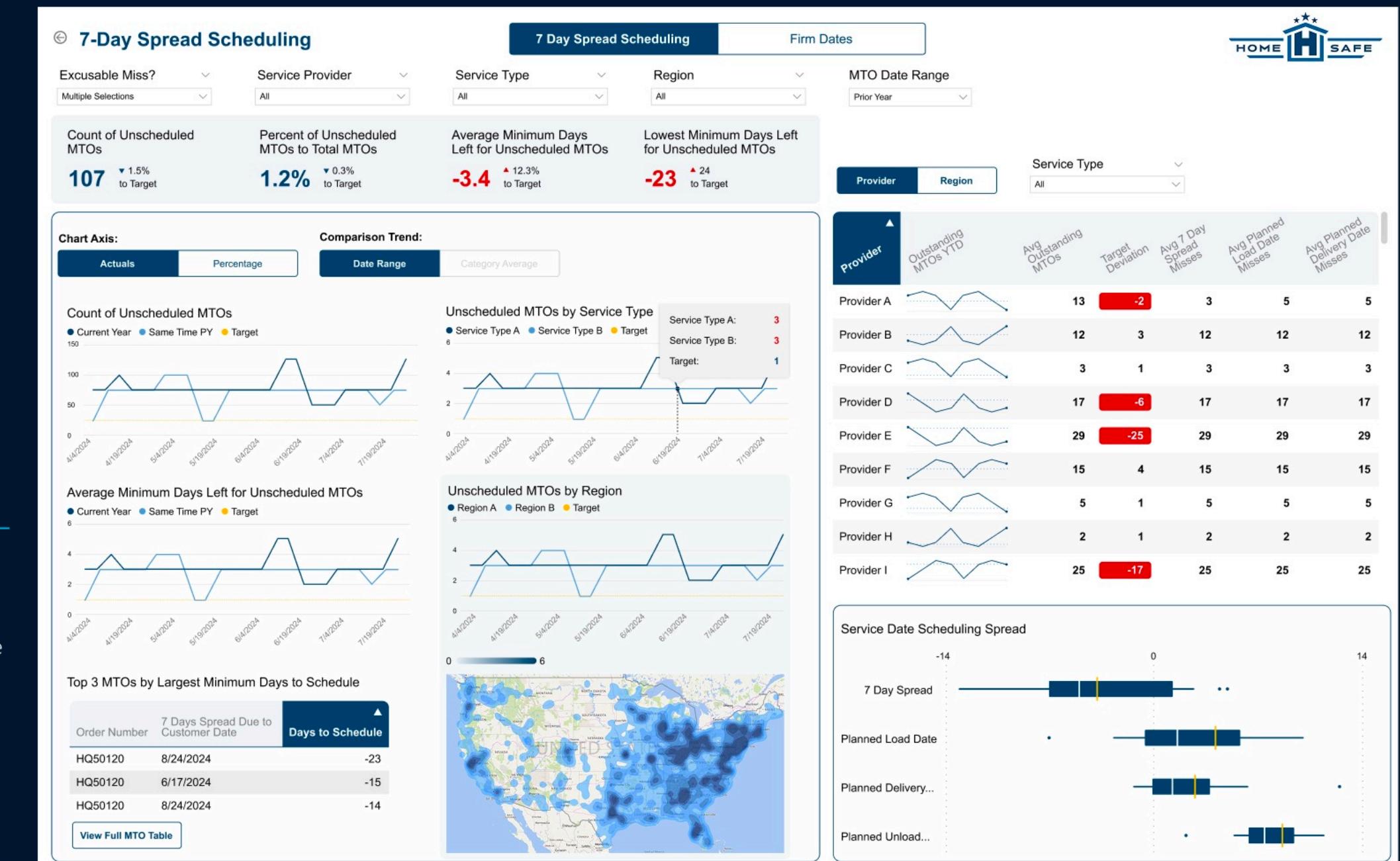
Discovery:

Initial discovery included:
- Reviewing existing dashboards and tools
- Establishing a current dashboard and data map
- Uncovering branding requirements for a design system

Existing Dashboard

The original state of the dashboards HSA was leveraging to perform their data analytics and insights.
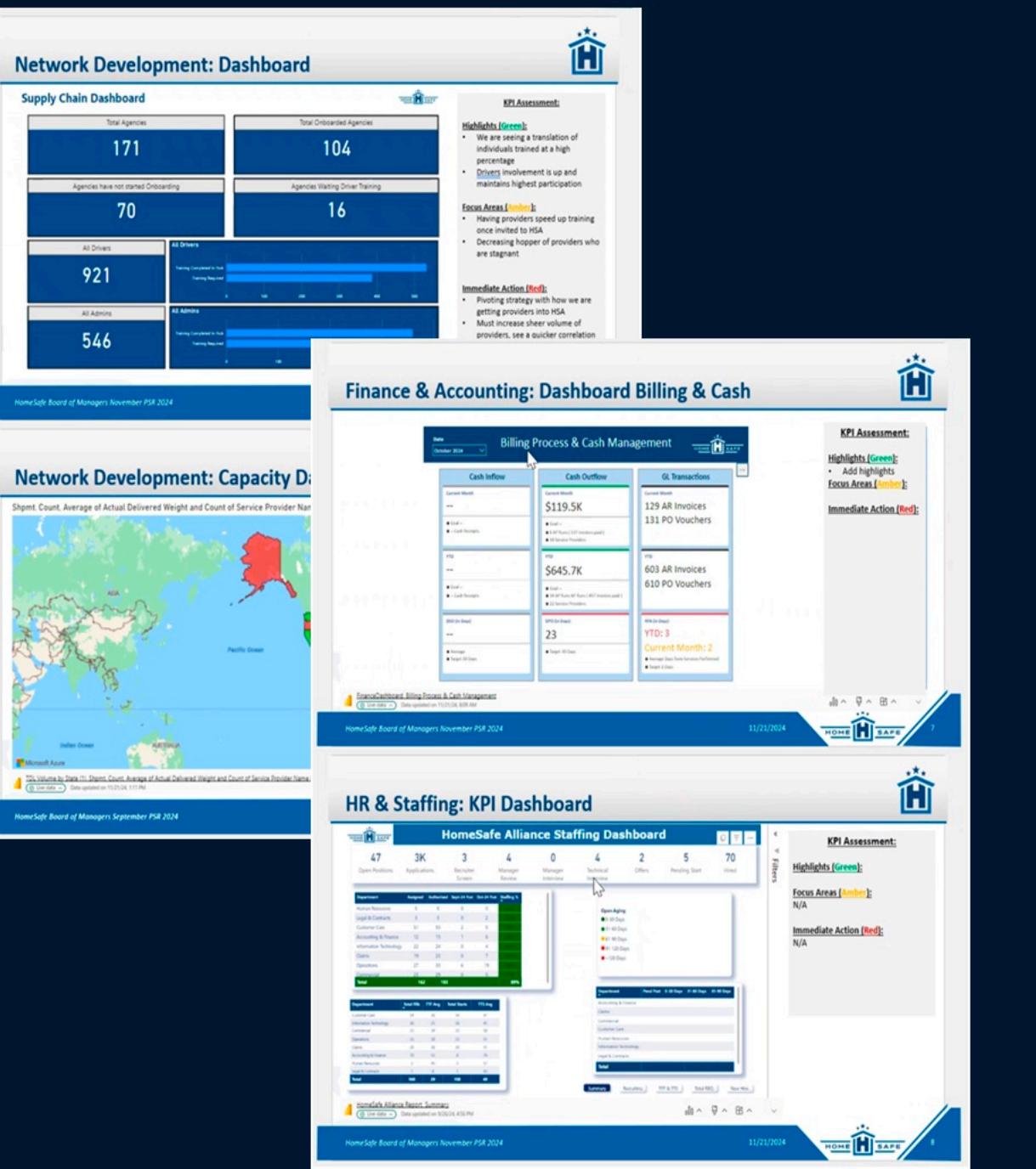
Dashboard Mapping

A preliminary mapping identifying overall dashboard structure. This helps divide between Executive and Analyst views, and aggregate versus high detail pages.

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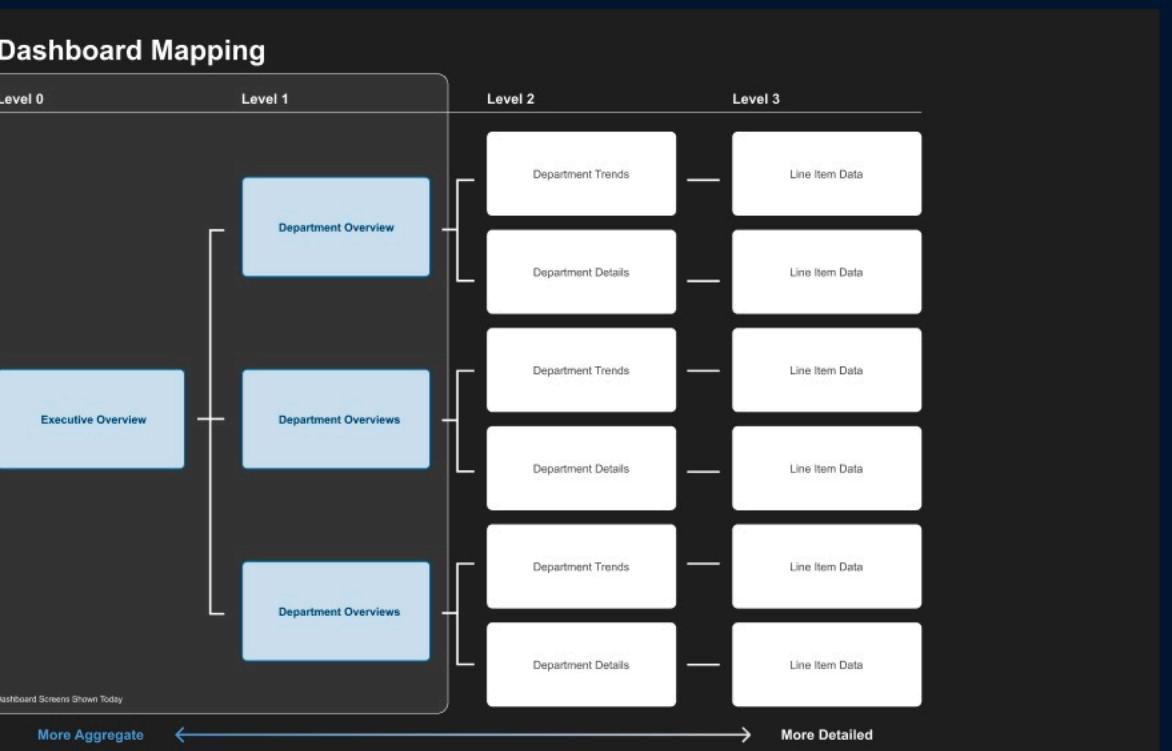
Ideation:

- Assessed all existing dashboard pages for graphics improvement and data visualization improvements
- Developed brand-aligned visual style to improve clarity and enhance communication of data insights
- Reviewed in-flight designs with end users multiple times to refine into final deliverables

Outcomes:

- 3 key dashboard types identified: Executive, Financial, and Operational
- 2 subcategories decided upon for detailed Operational drill through: 7-Day Spread (e.g. averages), and Firm Dates (e.g. timestamps)
- 2 subcategories decided upon for Financial drill through: Aggregates, and Task Orders (e.g. line items)

Dashboard Review

A snapshot of a marked up, current state dashboard from HSA.

Suggestions and questions are listed throughout in order to provide clarity and direction as new dashboard concepts are generated.
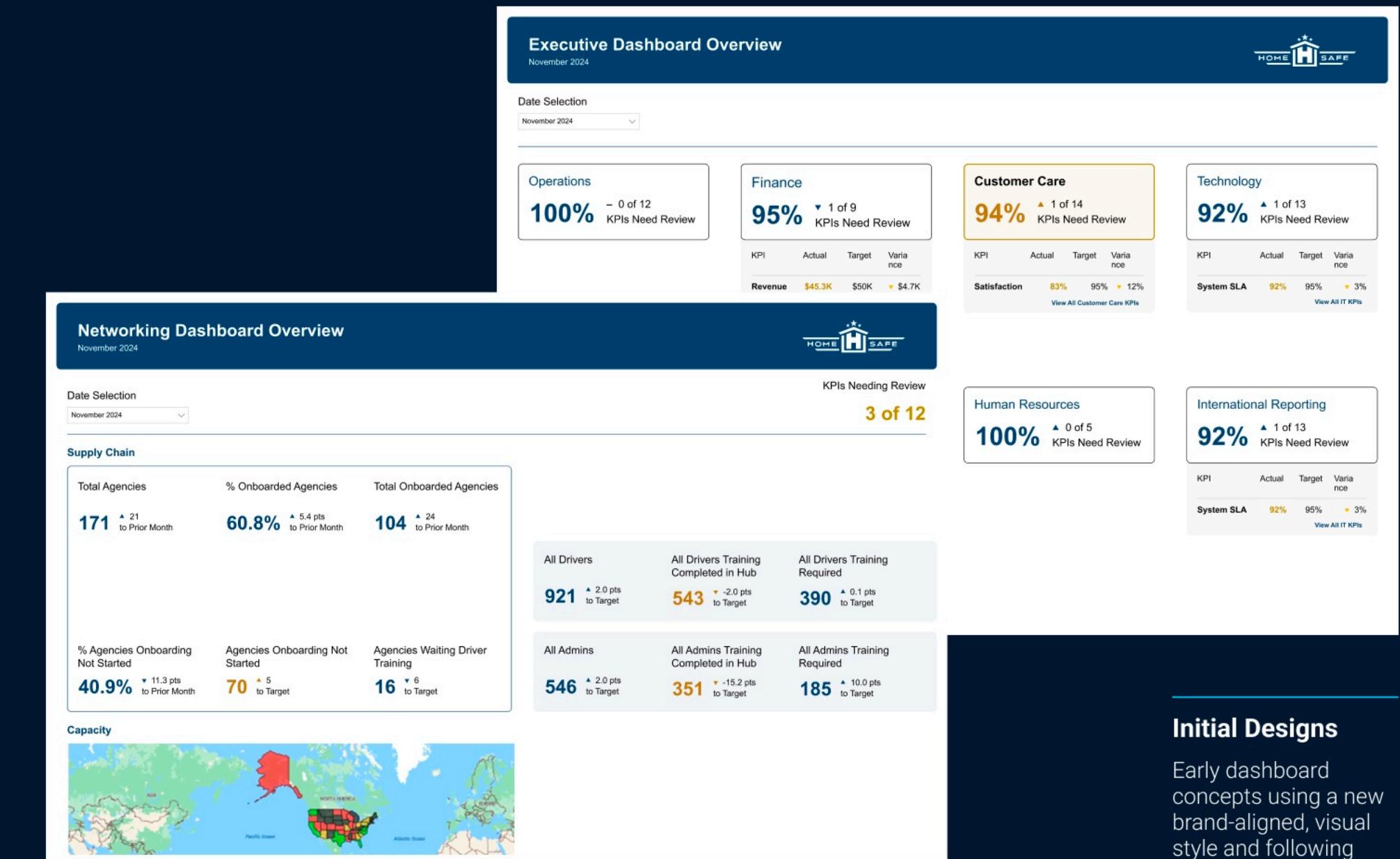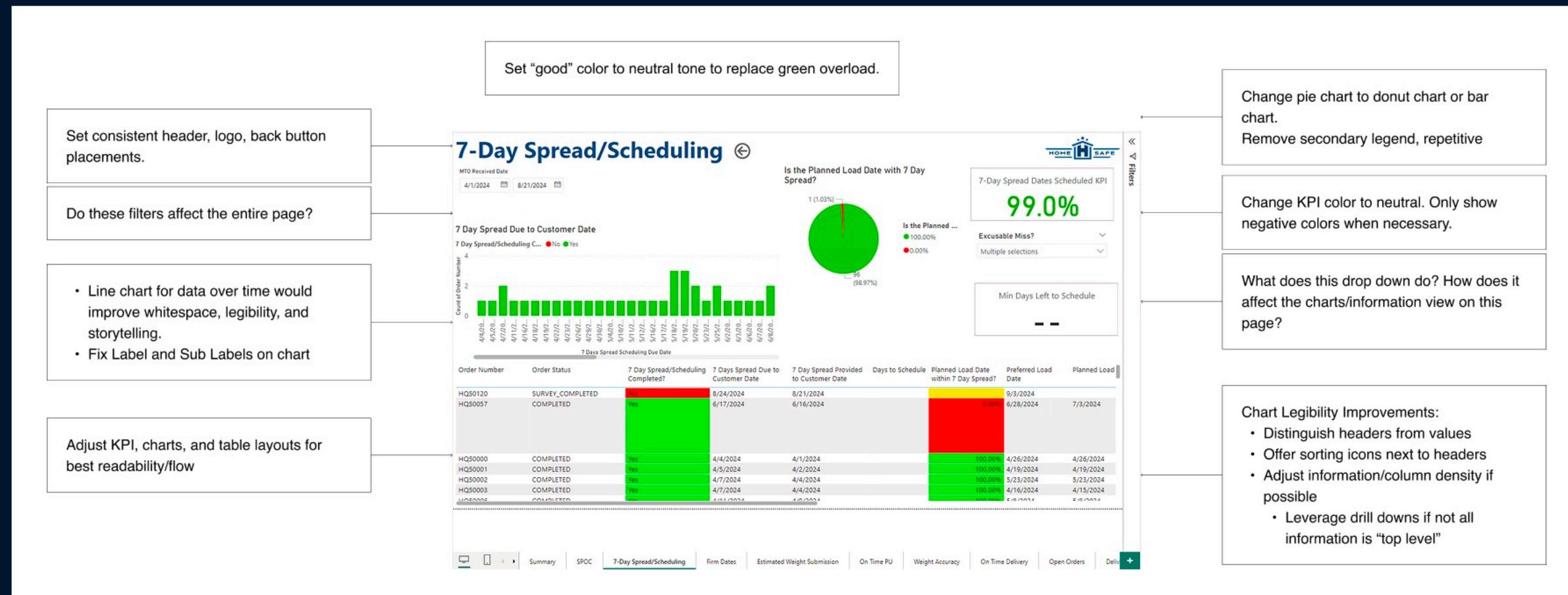
Initial Designs

Early dashboard concepts using a new brand-aligned, visual style and following best practices for data design. This includes color reduction and clarity, appropriate visualizations for data types, and grouping data efficiently.

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Executive Dashboard

Aimed at providing at-a-glance insights for C-level executives during recurring weekly, or monthly, meetings.

This dashboard aim to inform across the highest level, aggregate KPIs.

Subsequent analysis stemming from questions or concerns will be carried out by Leads in the organization, and their analysts.

Executive Operations Dashboard

MTO Date Selection

| Custom Data Range | 4/1/2024 | 8/21/2024 |

Move Status

All

Key Metrics

SPOC Assignment	Entitlements Counseling	7 Day Spread Counseling	Firm Date Scheduling	On Time Pickup	On Time Delivery
100% ▲ 2.0 pts to Target	**-.-%** -- pts to Target	**94.6%** ▼ -0.4 pts to Target	**96.6%** ▲ 1.6 pts to Target	**67.9%** ▼ -31.1 pts to Target	**96.6%** ▲ 11.1 pts to Target

Survey Weight on Time	Estimated Weight Within 110%	Actual Weight Accuracy	Claims Settled <$1K	All Claims Settled	Overall CSS Score
93.0% ▼ -2.0 pts to Target	**95.1%** ▲ 0.1 pts to Target	**74.8%** ▼ -15.2 pts to Target	**100.0%** ▲ 10.0 pts to Target	**100.0%** ▲ 5.0 pts to Target	**96.8%** ▲ 5.8 pts to Target

MTO Overview

Number of MTOs	MTOs Delivered	MTOs Open	MTOs Cancelled
356 ▲ 1.5% to Prior Year	**175** ▲ 0.3% to Prior Year	**167** ▲ 12.3% to Prior Year	**14** ▲ 5.0% to Prior Year

Today's Snapshot

MTOs PMS	MTOs Packing	MTOs Loading	MTOs Delivering
5 ▲1 Rolling 30 Day Avg	**5** ▲2 Rolling 30 Day Avg	**8** ▲0 Rolling 30 Day Avg	**1** ▼-2 Rolling 30 Day Avg

MTO Trends

MTO Overview

Total MTOs ● Delivered ● Open ● Cancelled
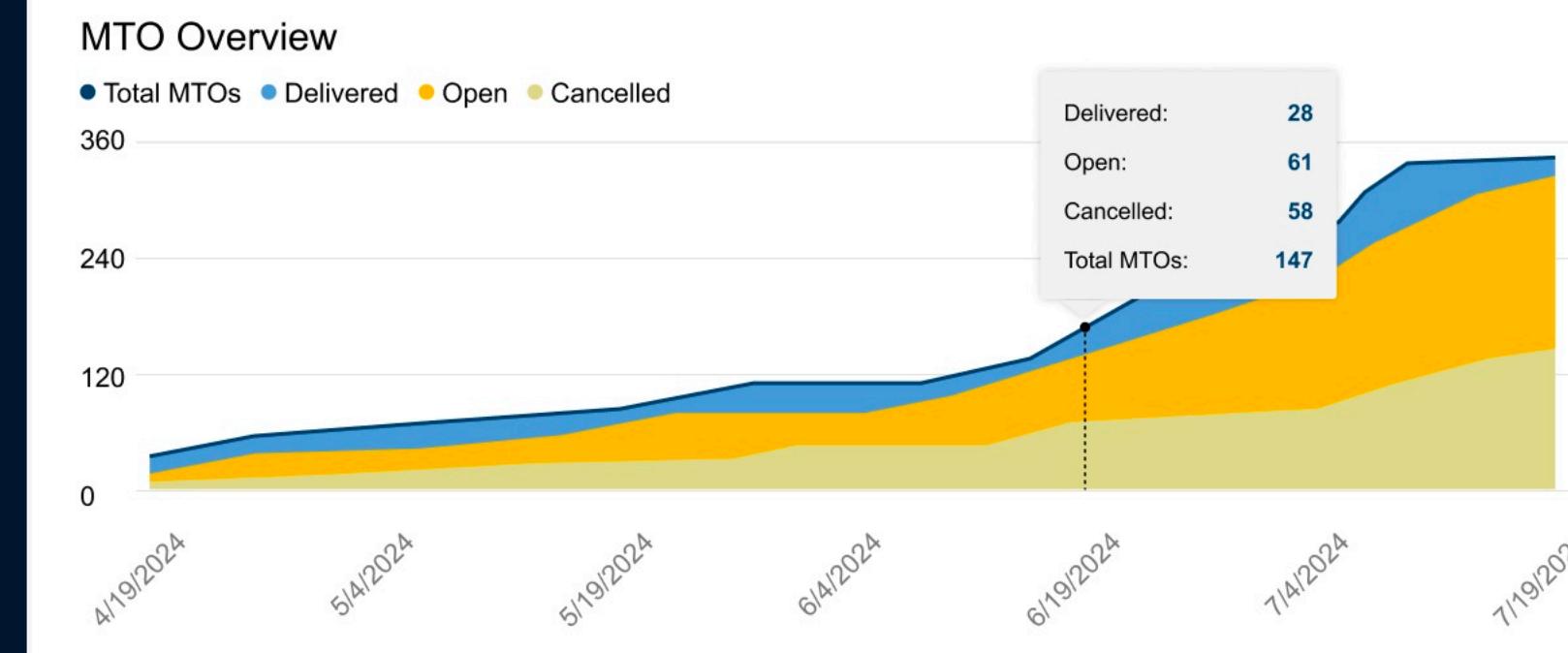
Delivered:	28
Open:	61
Cancelled:	58
Total MTOs:	147

Daily Snapshot

● PMS ● Packing ● Loading ● Delivering
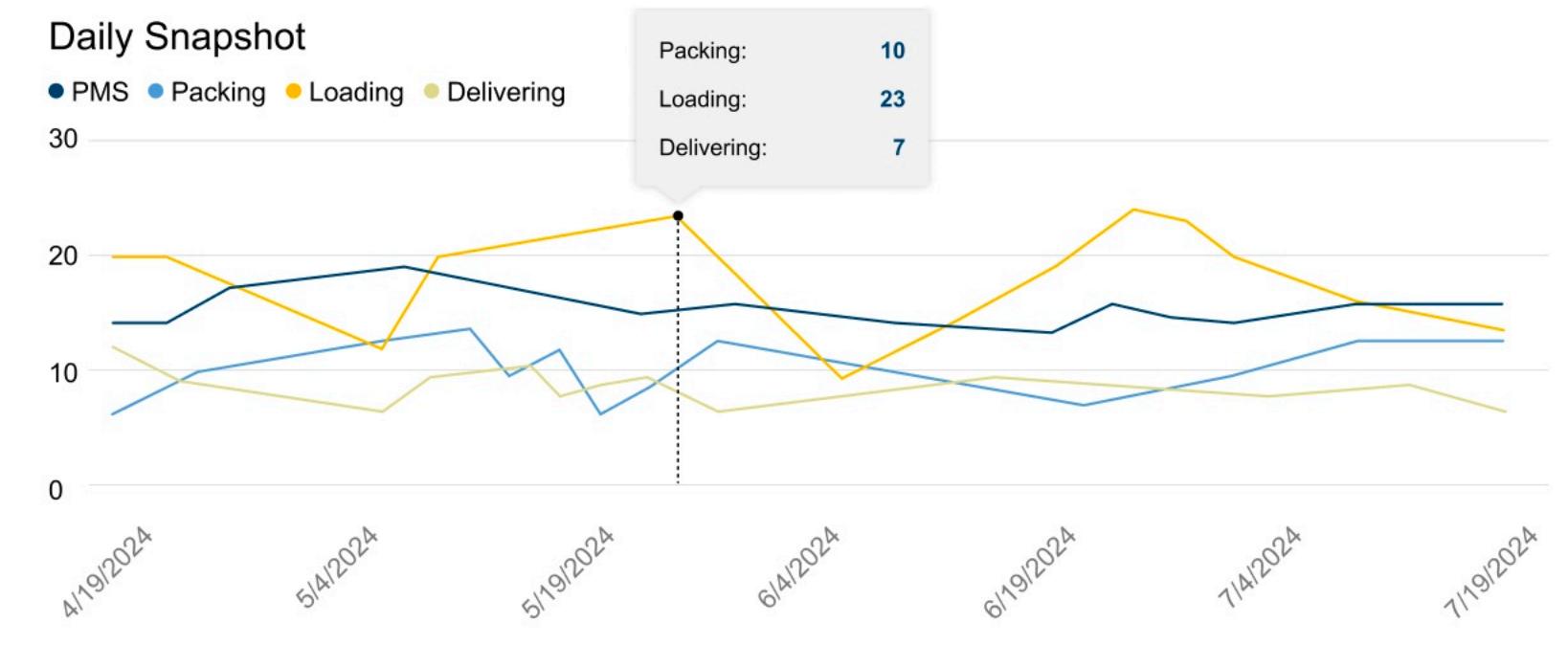
Packing:	10
Loading:	23
Delivering:	7

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Analyst Dashboards

Here is a selection of dashboards aimed at deeper analysis of operational performance.

Here key KPIs from the Executive level are broken down further. Current state, trends (historical and future), benchmarks, and statistical views are all found here, offering a deep view into performance.

Tables are included at the lowest level as a way to assess data at the line item level. This level of granularity can provide clarity in larger decision making, i.e. discovering whether a KPI is experiencing a negative trend or a one off event.

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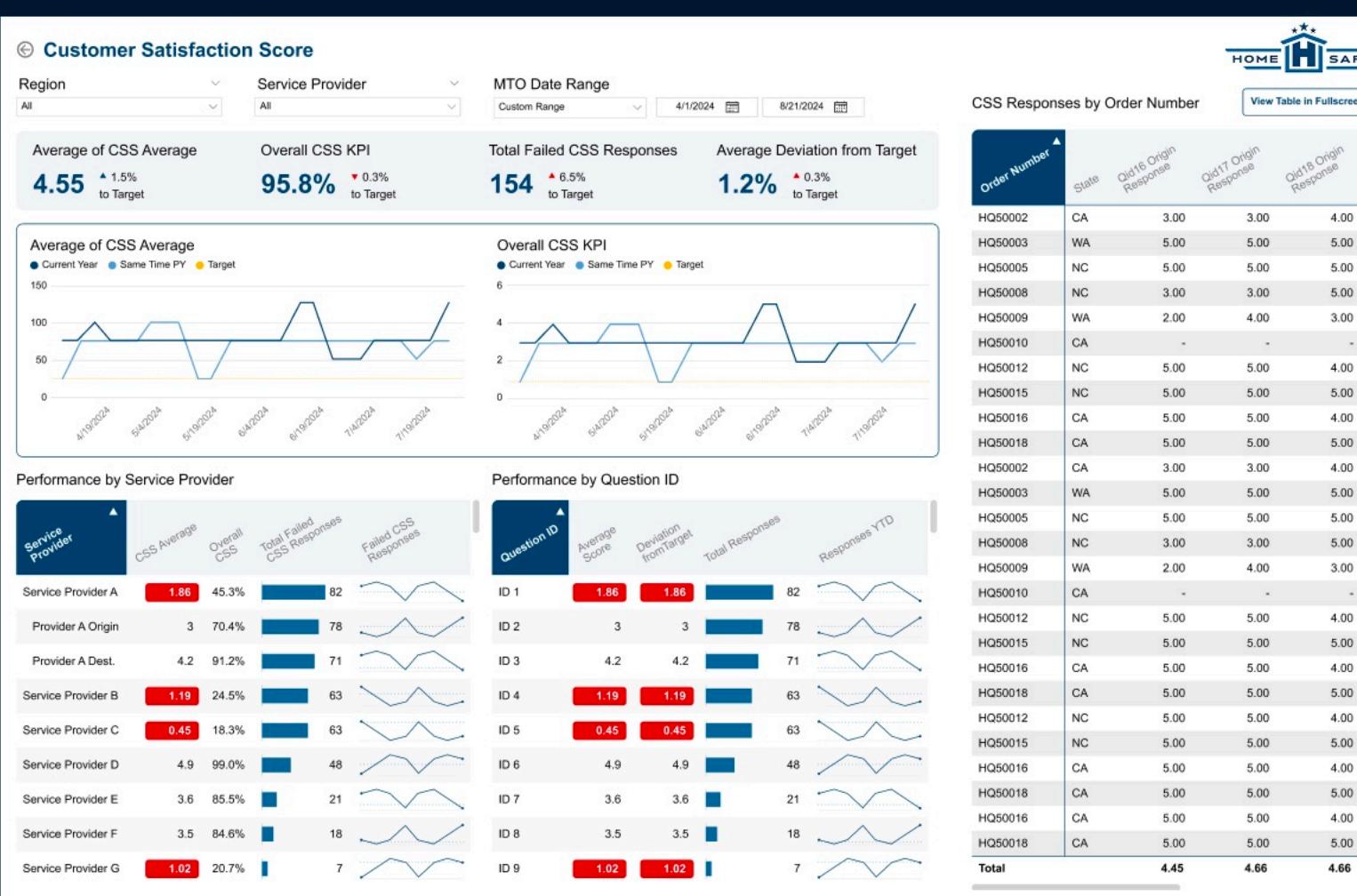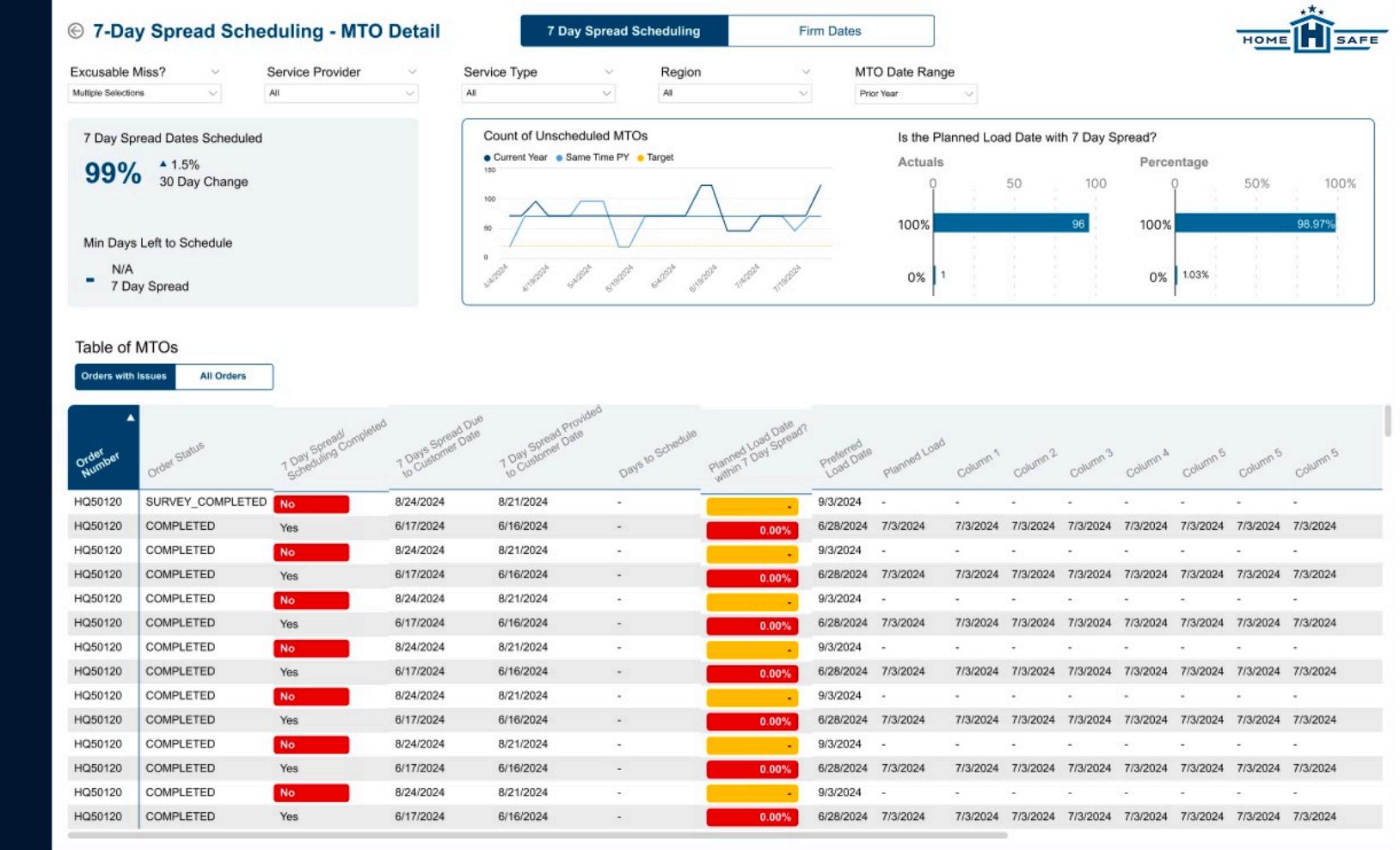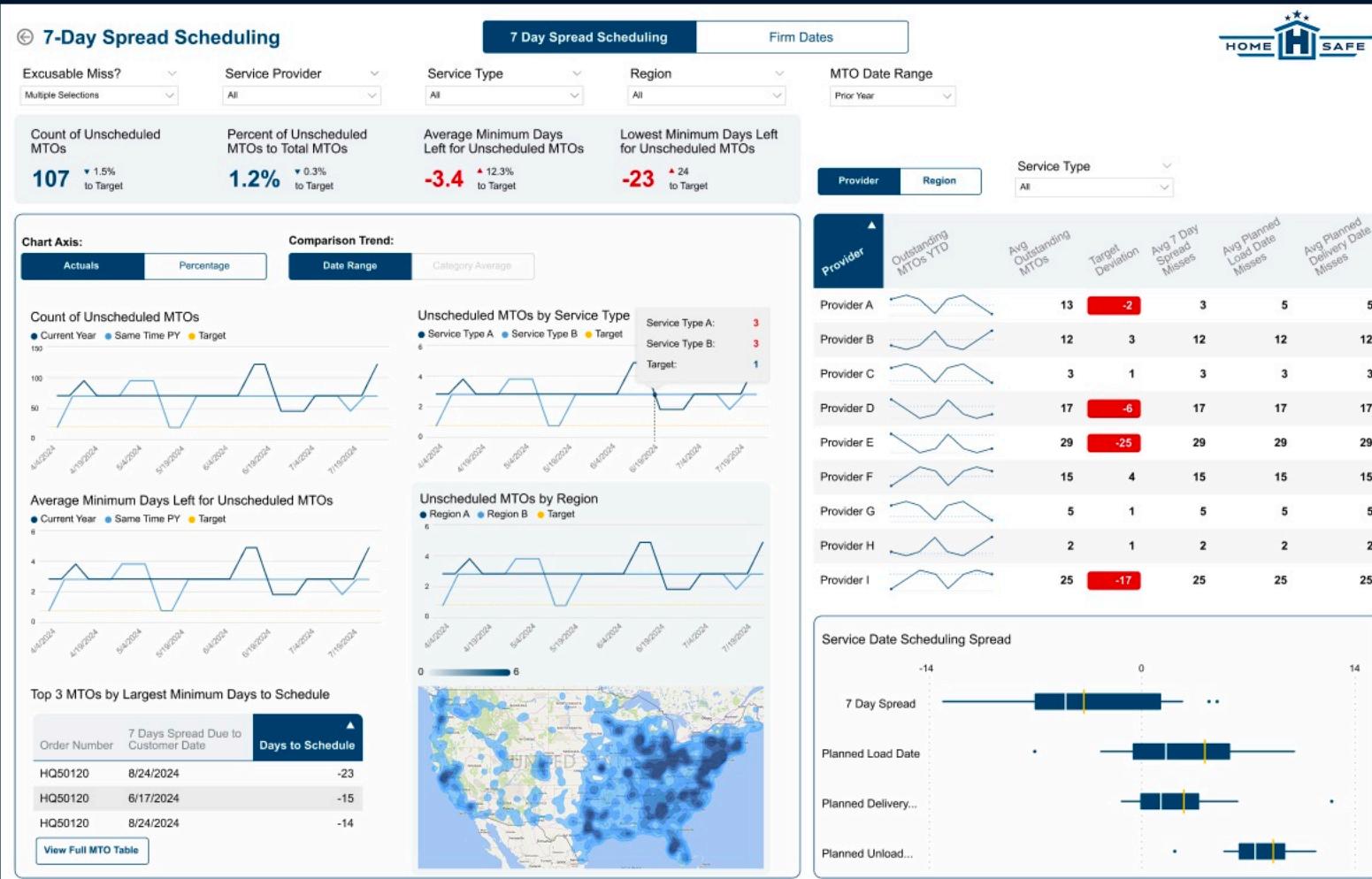
Financial Dashboards

This selection of financial dashboards shows improvements over the existing tools HSA was using. Essentially, they were operating out of visualized excel sheets.

These pages offer views into aggregate numbers as well trend insights and line item details.

Financial KPIs - Revenue & Cost

Date Selection: November - 2024

Revenue (incl. Fuel Surcharge)

Domestic	PPM	International	Collected	Revenue (incl. Fuel Surcharge)
$6,222	$3,297	$2,995	$2,100	$8,556

Revenue (excl. Fuel Surcharge)

Domestic	PPM	International	Collected	Revenue (excl. Fuel Surcharge)
$7,451	$1,021	$2,020	$1,250	$5,459

Job Income

Domestic	PPM	International	Job Income Total
$5,200	$1,403	$804	$6,451

Cost (incl. Fuel Surcharge)

Domestic	PPM	International	Paid Out	Cost (incl. Fuel Surcharge)
$4,451	$2,506	$840	$1,405	$4,451

Cost (excl. Fuel Surcharge)

Domestic	PPM	International	Paid Out	Cost (excl. Fuel Surcharge)
$2,125	$1,304	$451	$845	$2,660

Key Costs

Move HQ Fees	Daycos Fees	US Bank
$3,854	$2,574	$5,500

Job Income by Move Order

	Amount ($)	% of Job Income Total
Move Order 1	$820	5.3%
Move Order 2	$784	4.4%
Move Order 3	$120	4.2%
Move Order 4	$330	3.5%
Move Order 5	$731	3.3%
Move Order 6	$214	2.4%
Move Order 7	$95	2.0%
Move Order 8	$486	2.4%
Move Order 9	$255	2.0%
Move Order 10	$55	2.4%
Move Order 11	$730	2.0%
Move Order 12	$405	2.4%
Move Order 13	$660	2.0%
Move Order 14	$614	2.4%
Move Order 15	$305	2.0%
Move Order 16	$800	2.4%
Move Order 17	$352	2.0%
Move Order 18	$184	2.4%

Financial KPIs - Claims & Reserves

Date Selection: November - 2024

Claims

Accrued Balance	Payouts	Chargebacks	Net Claims %	Reserve Balance
$9,668	$5,010	$3,000	2.0% ▼ 1.0% under Target	$7,424

Claims Reserve Balance ($)

CQI Incentive Reserve

Accrued Balance	Payout	Paid Out %	Reserve Balance
$4,451	$0	0.8%	$4,451 ▲ 1.0% of Revenue

CQI Incentive Reserve Balance ($)

AR Allowance

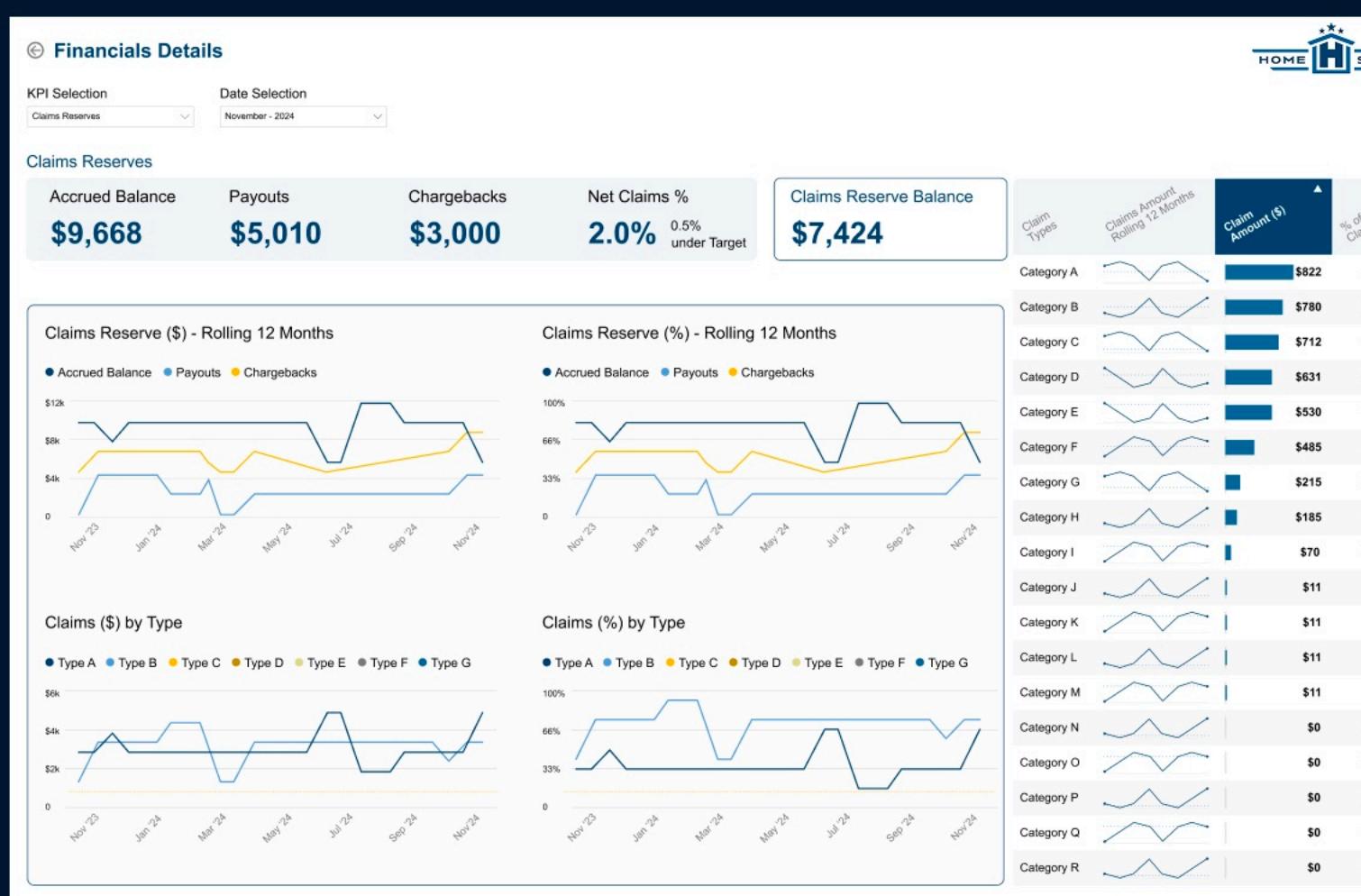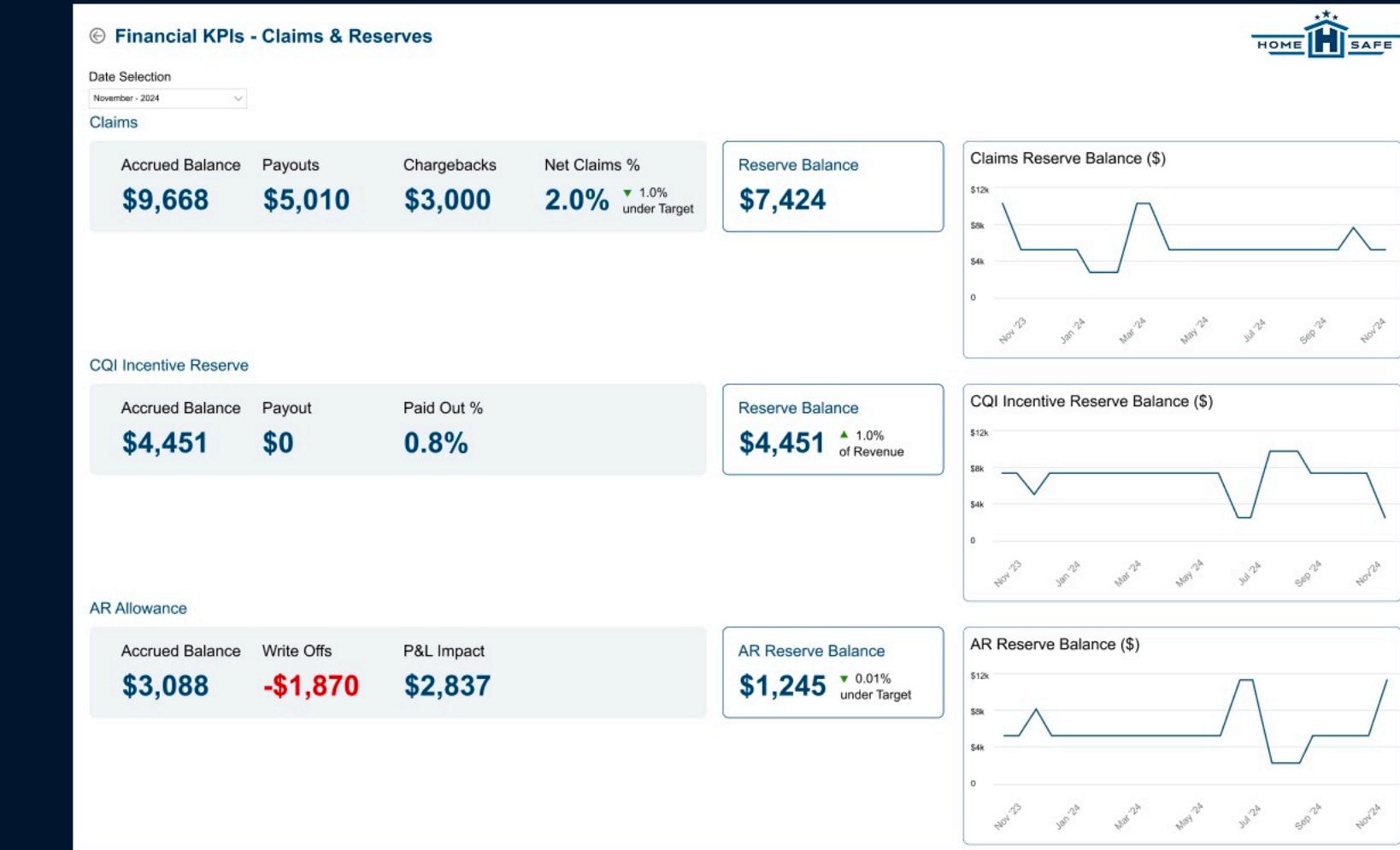| Accrued Balance	Write Offs	P&L Impact	AR Reserve Balance
$3,088	-$1,870	$2,837	$1,245 ▼ 0.01% under Target

AR Reserve Balance ($)

Financials Details

KPI Selection: Claims Reserves
Date Selection: November - 2024

Claims Reserves

Accrued Balance	Payouts	Chargebacks	Net Claims %	Claims Reserve Balance
$9,668	$5,010	$3,000	2.0% 0.5% under Target	$7,424

Claims Reserve ($) - Rolling 12 Months
● Accrued Balance ● Payouts ● Chargebacks

Claims Reserve (%) - Rolling 12 Months
● Accrued Balance ● Payouts ● Chargebacks

Claims ($) by Type
● Type A ● Type B ● Type C ● Type D ● Type E ● Type F ● Type G

Claims (%) by Type
● Type A ● Type B ● Type C ● Type D ● Type E ● Type F ● Type G

Claim Types	Claims Amount Rolling 12 Months	Claim Amount ($)	% of Total Claims
Category A		$822	45.3%
Category B		$780	70.4%
Category C		$712	91.2%
Category D		$631	24.5%
Category E		$530	18.3%
Category F		$485	99.0%
Category G		$215	85.5%
Category H		$185	84.6%
Category I		$70	20.7%
Category J		$11	1.3%
Category K		$11	1.3%
Category L		$11	1.3%
Category M		$11	1.3%
Category N		$0	0.00%
Category O		$0	0.00%
Category P		$0	0.00%
Category Q		$0	0.00%
Category R		$0	0.00%

Financials - Task Order Details

Date Selection: November - 2024

[Summary by Service] [All Orders Summary] [All Orders Details]
[All] [Pack] [Load] [Transport] [FSC] [BIT] [Unload] [Unpack] [Add Comp] [Accessorial]

MHQ Task Order	Zip Code Origin	Zip Code Destination	Requested P/U Date	Actual P/U Date	Service Type	UofM	Invc Quantity	Revenue	Voucher Qty	Cost	Margin $	Margin %
HQ50000	28546	28543	04/26/2024	04/26/2024	Survey	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ50000	28546	28543	04/26/2024	04/26/2024	Move Management Fee	EA	1.00	$553.19	$553.19	$553.19	$553.19	$553.19
HQ50000	28546	28543	04/26/2024	04/26/2024	Origin Fee (Domestic Only)	CWT	45.80	$114.96	$114.96	$114.96	$114.96	$114.96
HQ50000	28546	28543	04/26/2024	04/26/2024	Domestic Destination Price	CWT	45.80	$114.96	$114.96	$114.96	$114.96	$114.96
HQ50000	28546	28543	04/26/2024	04/26/2024	Domestic Packing	CWT	45.80	$1,142.71	$1,142.71	$1,142.71	$1,142.71	$1,142.71
HQ50000	28546	28543	04/26/2024	04/26/2024	Domestic Unpacking	CWT	45.80	$119.54	$119.54	$119.54	$119.54	$119.54
HQ50000	28546	28543	04/26/2024	04/26/2024	Domestic Shorthaul	CWT	45.80	$121.83	$121.83	$121.83	$121.83	$121.83
HQ50000	28546	28543	04/26/2024	04/26/2024	Domestic Shipment Fuel Surcharge	MI	2.00	$0.12	$0.12	$0.12	$0.12	$0.12
HQ50000	28546	28543	04/26/2024	04/26/2024	Additional Compensation	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ50000	28546	28543	04/26/2024	04/26/2024	Additional Compensation	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ50000				04/26/2024								
HQ40001	92154	92118	04/19/2024	04/19/2024	Survey	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ40001	92154	92118	04/19/2024	04/19/2024	Move Management Fee	EA	1.00	$553.19	$553.19	$553.19	$553.19	$553.19
HQ40001	92154	92118	04/19/2024	04/19/2024	Origin Fee (Domestic Only)	CWT	45.80	$114.96	$114.96	$114.96	$114.96	$114.96
HQ40001	92154	92118	04/19/2024	04/19/2024	Domestic Destination Price	CWT	45.80	$114.96	$114.96	$114.96	$114.96	$114.96
HQ40001	92154	92118	04/19/2024	04/19/2024	Domestic Packing	CWT	45.80	$1,142.71	$1,142.71	$1,142.71	$1,142.71	$1,142.71
HQ40001	92154	92118	04/19/2024	04/19/2024	Domestic Unpacking	CWT	45.80	$119.54	$119.54	$119.54	$119.54	$119.54
HQ40001	92154	92118	04/19/2024	04/19/2024	Domestic Shorthaul	MI	45.80	$121.83	$121.83	$121.83	$121.83	$121.83
HQ40001	92154	92118	04/19/2024	04/19/2024	Domestic Shipment Fuel Surcharge	CWT	45.80	$0.12	$0.12	$0.12	$0.12	$0.12
HQ40001	92154	92118	04/19/2024	04/19/2024	Additional Compensation	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ40001	92154	92118	04/19/2024	04/19/2024	Additional Compensation	EA	1.00	$0.00	$0.00	$0.00	$0.00	$0.00
HQ40001				04/26/2024								

HomeSafe Alliance

Design System

This is a view of the simplified design system I introduced to HSA.

Previously there was no coherence between dashboards from different teams within the organization.

This structure aligned brand guidelines with bes practices for data visualization. Long term, this ensures future dashboard pages created will (at the very least) visually match the existing pages.

HSA Design System
Guidelines

Brand Assets

Asset	HSA Logo
Color	RGB: 62, 107,100; Hex: #003E6B
BG Color	RGB: 255,255,255; Hex: #FFFFFF
Usage	Primary logo. Use on white backgrounds or lighter backgrounds where contrast exceeds 3.

Not to be layered over images, charts, or other assets.

Padding — Minimum: 20px / Minimum: 40px

Asset	HSA Secondary Logo
Color	RGB: 255,255,255; Hex: #FFFFFF
BG Color	RGB: 62,107,100; Hex: #003E6B
Usage	Secondary logo. Use on dark blue or black backgrounds which fill the entire page. Do not "float" the logo in a box if the predominant background is white or a lighter color.

Not to be layered over images, charts, or other assets.

Padding — Minimum: 20px / Minimum: 40px

Colors

Blue 1
RGB: 62,107,100
Hex: #003E6B
Primary color for data points, graphic elements, and interactive elements in a selected state.
Used to indicate neutral or positive in data visuals.

Blue 2
RGB: 17,100,151
Hex: #116497
Used in gradient scale in data visualizations.

Blue 3
RGB: 44,136,212
Hex: #2C88D4
Used in gradient scale in data visualizations.

Blue 4
RGB: 91,155,213
Hex: #5B9BD5
Secondary color for data points, if not on a scale.
Used in gradient scale in data visualizations.

Light Blue
RGB: 242,245,248
Hex: #F2F5F8
Secondary background color to highlight or group elements. Also used for non-selected labels.
Used in gradient scale in data visualizations.

White
RGB: 255,255,255
Hex: #FFFFFF
Primary background color. Used to show non-selected toggle options as well.

Gray 1
RGB: 248,248,248
Hex: #F8F8F8
Secondary background color for rows in tables.

Gray 2
RGB: 242,242,242
Hex: #F2F2F2
Fill color for tool tips that open on hover.

Gray 3
RGB: 210,210,210
Hex: #D2D2D2
Used as outlines for interactive elements.

Gray 4
RGB: 123,123,123
Hex: #7B7B7B
Secondary color for text. Used to indicate non-selected options.

Black
RGB: 0,0,0
Hex: #000000
Primary text color. Not used for data visualization.

Yellow 1
RGB: 191,144,0
Hex: #BF9000
Used in gradient scale in data visualizations.

Yellow 2
RGB: 255,191,0
Hex: #FFBF00
Tertiary color for data points. Also used when discrete categories are being compared.
Used in gradient scale in data visualizations.

Yellow 3
RGB: 222,218,146
Hex: #DEDA92
Used in gradient scale in data visualizations.

Red
RGB: 216,0,3
Hex: #D80003
Primary color for data points and graphic elements that represent negative qualities.

Typography

All type uses black as a default and may be set to any color as long as it meets contrast requirements against the background color.

TYPE-LG
Arial
20px
Lorem ipsum dolor sit amet, consectetur adipiscing

TYPE-BASE
Arial
16px
Lorem ipsum dolor sit amet, consecatur adipiscing

TYPE-SM
Arial
14px
Lorem ipsum dolor sit amet, consectetur adipiscing

TYPE-XS
Arial
12px
Lorem ipsum dolor sit amet, consectetur adipiscing

Arial
10px
Lorem ipsum dolor sit amet, consectetur adipiscing

TYPE-HEADING-MD
Arial Bold
24px
Lorem ipsum dolor sit amet, consectur adipiscing

TYPE-HEADING-SM
Arial Bold
16px
Lorem ipsum dolor sit amet, consectetur adipiscing

TYPE-HEADING-XS
Arial Bold
12px
Lorem ipsum dolor sit amet, consectetur adipiscing

Layouts

Padding All Sides: 20 px

Header Block — Width: Full Available Width, 100% — Height: 80 px

Global Filter & Interactive Element Block — Width: Full Available Width, 100% — Height: 52 px

Data Visualization Block

Width: (Full Width/# of Data Viz Blocks) - 20*(# of Data Viz Blocks - 1)

Height: 900 px

Width: 1600 px

Notes: All padding between blocks, horizontally and vertically, is 20px.

All Data Visualization blocks can be modeled after the template below. Regarding selecting which visualization blocks go where, more general or visual heavy block should be placed first, followed by progressively more detailed views. I.e. start with charts, progress to denser visuals, and end with line item tables. To place these on the dashboard, start in the available top left space and progress top down, left to right, adjusting block size based on ratios given.

AT&T

Brief:

In order to minimize and mitigate fraudulent customer activity involving physical hardware, AT&T sought to completely overhaul their existing fraud detection tool. This effort existed at the intersection of a bespoke software and custom analytics dashboard, aiming to simultaneously inform and empower AT&T's in house users.

Goals:

- Increase instances of correctly identified fraudulent activity (true positives)
- Reduce instances of erroneously identified fraudulent activity (false positives)
- Develop capability for specific end users to modify and customize their tool as needed

Outcome:

- Designed and launched a custom software (GFMS) for AT&T agents to better identify instances of fraud
- Created a customization sandbox, allowing end users to adapt and customize GFMS as future needs emerged
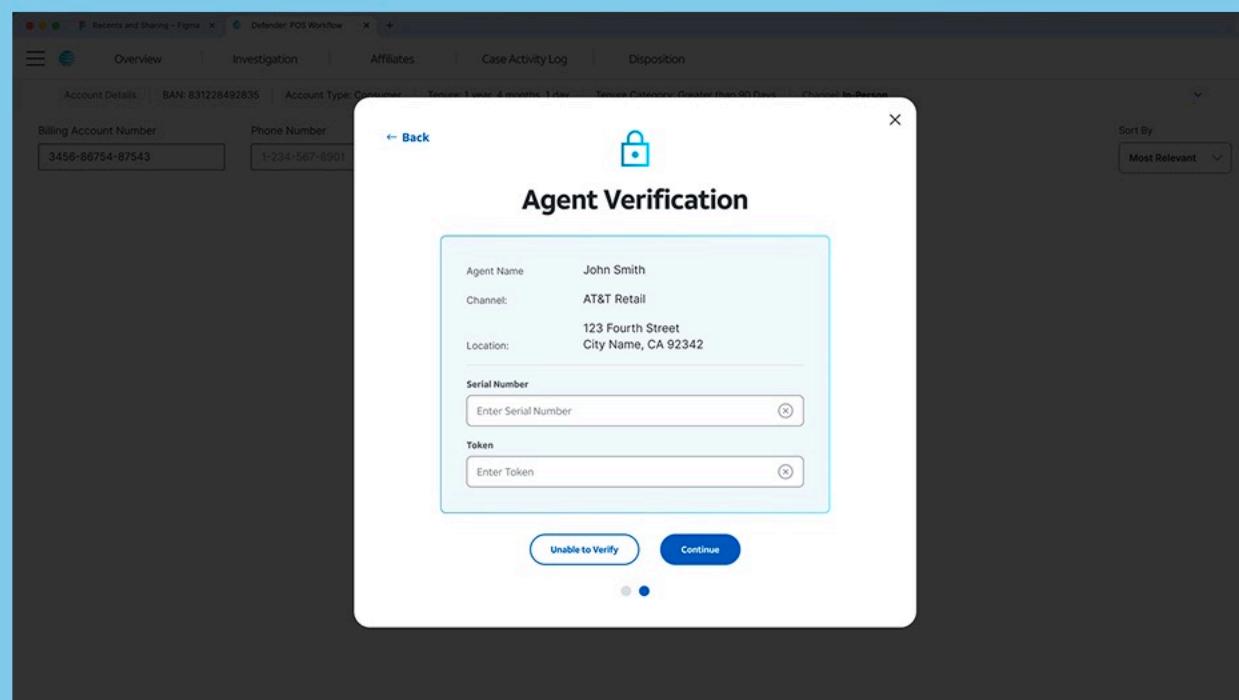
Deliverable

A custom tool for AT&T's agents to better detect fraud.

Through a combination of analytics from customer accounts and branching user work flows, agents can more effectively and efficiently get to the correct identification of fraud.

This also has the added benefit of improving AT&T's customer experience.

AT&T

Overview Page

This page sets up agents to conduct a fraud investigation if necessary.

The agents can see a customer's profile and history, using their existing data to confirm what the customer is actively doing.

Overview pages adapt contextually based on Key Fraud indicators flagged by the system. Other factors, such as customer account age, also factor in to the data presented on screen.

Investigation Page

This is the key page in an agent's process of ascertaining fraud. The data content is dynamically based on the Key Fraud indicators detected by the system.

The agent cross checks information here with the suspected fraud and deduces whether they believe it is true fraud.

Depending on the customer, the conflicting data points in question, and the possible type of fraud, different intervention methods will be presented to the agent.

Outbound Call Interventions

Consumer

Find phone in Risk Research

Phone # provided

Business

Find FAN Level Contact

Get Affiliates

The Get Affiliates tool allows agents to cross reference customer data points across a variety of parameters.

With visibility into items such as known SSN's or Addresses, agents can infer which high risk data points likely indicate fraud.

Case Disposition

The Case Disposition section allows agents to document the outcome of a fraud case.

This includes capturing the notes and data points leveraged to make a fraud-yes, fraud-no, or unclear decision.

Case Activity Log

The Activity Log is a dynamic table that captures all the actions and steps taken by the agent during a fraud case. This log serves as reference in case a dispute is raised, or if a future scenario needs to reference a prior case.

Sandbox Editor

The sandbox editor allows users to build custom fraud detection workflows for the system.

Existing workflows are populated as 'files', allowing users a base to start working from.

The editor is rule-based, allowing users to make near infinite combinations to address future types of fraud that have not been detected yet.

Admin Portal Home Menu

Menu Section Component

Behavior & Usage

Page Heading

This is where the user can configure the heading and instructions for a given Alert.

- The alert instructions can have the text fully formatted.

Investigation Step

This section allows users to add, edit, and remove investigation steps as well as their associated dispositions for the alert.

- Steps contain Labels, Data Values, Links, and a Disposition
  - Steps can be re-ordered or deleted.
- Data Values can be re-ordered via the grab handles
  - Data Values can also be removed once added
- Fraud Indicators for the Step Disposition can be searched for in the input field
  - Multiple selections are possible
- Fraud Indicators can be re-ordered or deleted
  - The specific actions for the disposition selections can be made for each fraud indicator

Page Heading

Investigative Step

Behavior & Usage

Code Tables List

A list of all code tables that currently exist. The cards follow the same format as on the home page.

- Code Tables have Names, IDs, Owners, and Last Edit details.
  - Selecting a code table will take the user to the table view.
  - Cards populate left to right, top to bottom.
  - All Code Tables are shown by default.
  - The user can scroll vertically if the number of cards exceeds the page height.

Code Table List

Selected Data Viz Designs

Unique dashboard pages made during hackathons and non-client projects

Predicting Churn

Each node is a description of an attribute
eg: contract length is one year

0%   67%

Color = probability of churn being yes/no
■ Churn = No   ■ Churn = Yes
In the example above: 67% probability that churn is no

Length
Frequency ▾

Order by
Probability ▾

◉ Overview ○ Group

Frequency
30   85

Probability
30   85

Lift
30   85

Churn is no

51 % probablity that Churn is no

51% probaility that churn is yes

50   1000

100 % probablity that Churn is no

100 % probablity that Churn is yes

Churn is yes
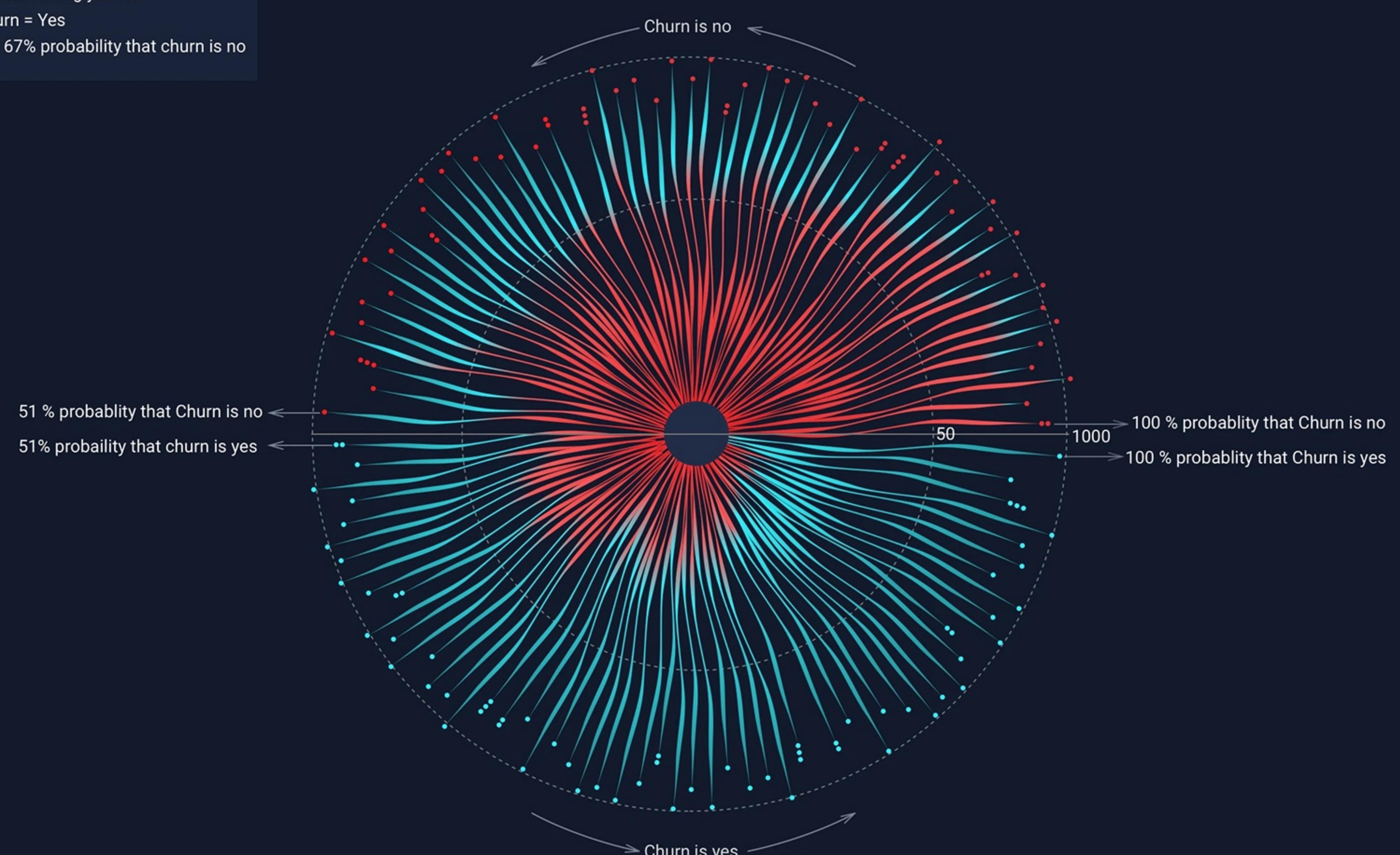
Mapping Reduction of Greenhouse Gas Emission to Segments of Buildings

0<5% **5-10%** **10-15%**

GHG EMISSION REDUCTION

PRIMARY POWER SOURCE

Electricity Gas Steam

YEAR BUILT

<1900 1900-1999 2000-2016 <1900 1900-1999 2000-2016 1900-1999 2000-2016

PROPERTY TYPE
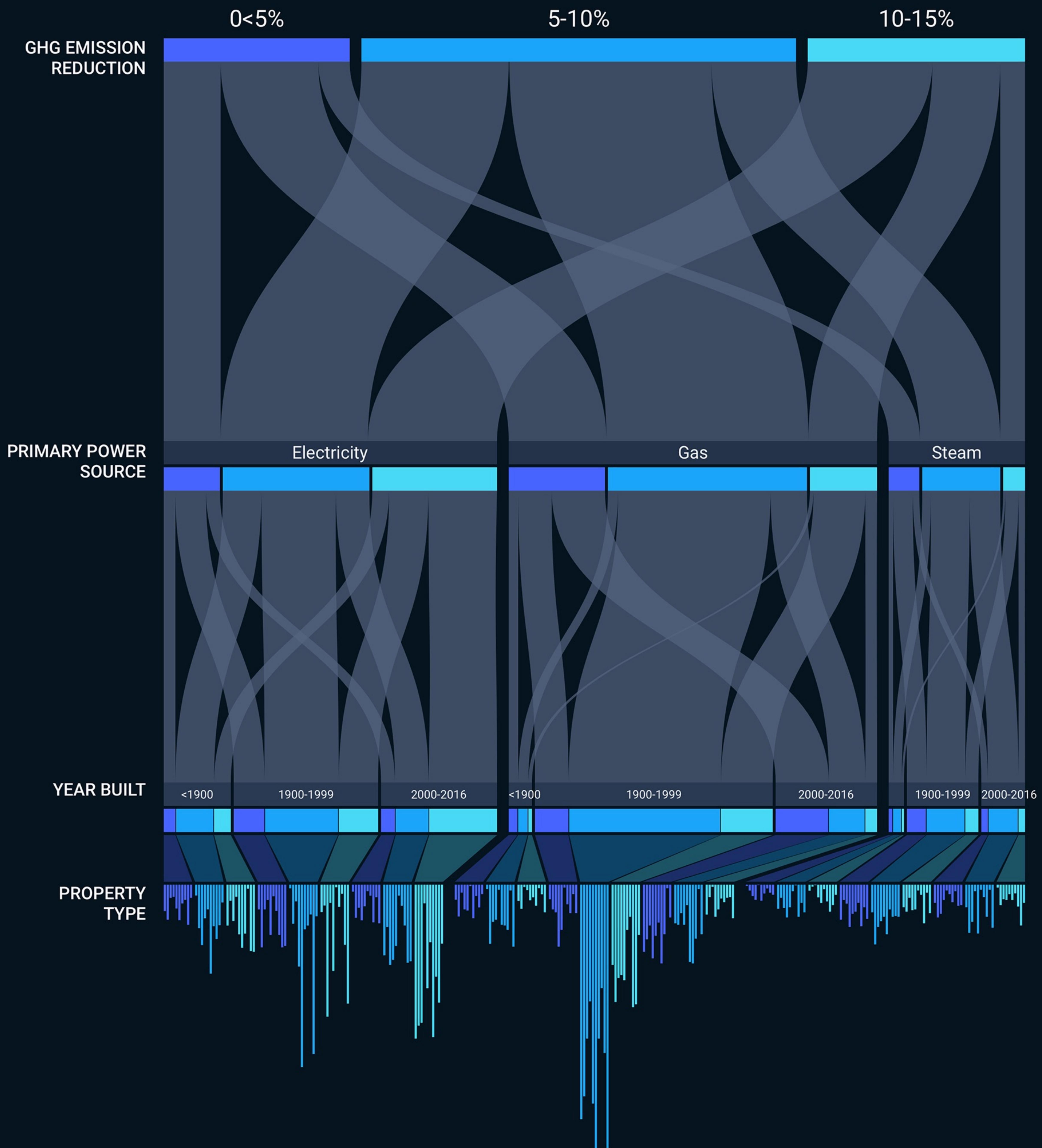
Filters

AOG's

Location

Language

Layers

Weather

Opacity: 80%

Terrain

Opacity: 80%

AOG's

Day/Night

Animation

Demo Mode

Zoom Speed: 5 secs

Pause Time: 3 mins

AXIS

AX20393

- Sao Paulo, Brazil
- Current local time
  13:30 EST/ GMT+2
- AOG Reported
  Oct 23rd 2:30 EST/ 14:30 GMT
- Next flight
  Delayed by 2 hours
  Oct 25th 14:00 GMT

A029384

- Reno, Nevada
- Current local time
  13:30 EST/ GMT+3
- AOG Reported
  Oct 23rd 2:30 EST/ 14:30 GMT
- On Demand

A12-3349

- Landivisiau, France
- Current local time
  13:30 CEST/ GMT+2
- AOG Reported
  Oct 23rd 2:30 EST/ 14:30 GMT
- Next flight
  2 hours
  Oct 25th 14:00 GMT

Legend

- ○ AOG
- ● Parts Depo
- ● Comany Owned Facilities
- ● Authorized Service Centres
- ✈ Response Jet
- ◆ Service Team

A234203
Service Team Arrived

A12-3349
Service Team Assigned

A029384
Service Team Arrived

AX20393
Service Team In Transit

Design Process

Get to know my data visualization design approach

Do in order

Do in order

1.1 Evaluate overall performance of the department

1. Monitor Supply U... performance of t...

Inquire explanation of good/bad performance

repor...

1.3.2 Explore possible ... variance of daily SU at p... level with **AI/ML models**

2.2 Evaluate the impactfulness

...t fewer ... first

2.3 Identify potential factors that drive supply usage variance or ...rease

3. Implement changes in workflow or usage behavior

4. Inform supply chain management team of the implemented changes

How much supply have we used on a per volume basis?
How much supply have we used in total?
Did we use more or less compared to prior year?
Did we have a higher volume compared to prior year?
Is our supply usage trending up or down this year?
Are we trending in a similar seasonality as prior year?

In which key areas did we have good or bad performance?
In which key areas did performance improve or decline?
Did these key areas have high volume?

If supply usage is high or higher than prior year in a key area, what are the driving factors?
↳ Which DRGs are driving?
↳ Which CPTs are driving?

...t supplies were used? How many? What cost?
...day of week, month of year, or season is it?
...re the demographics of the patient?
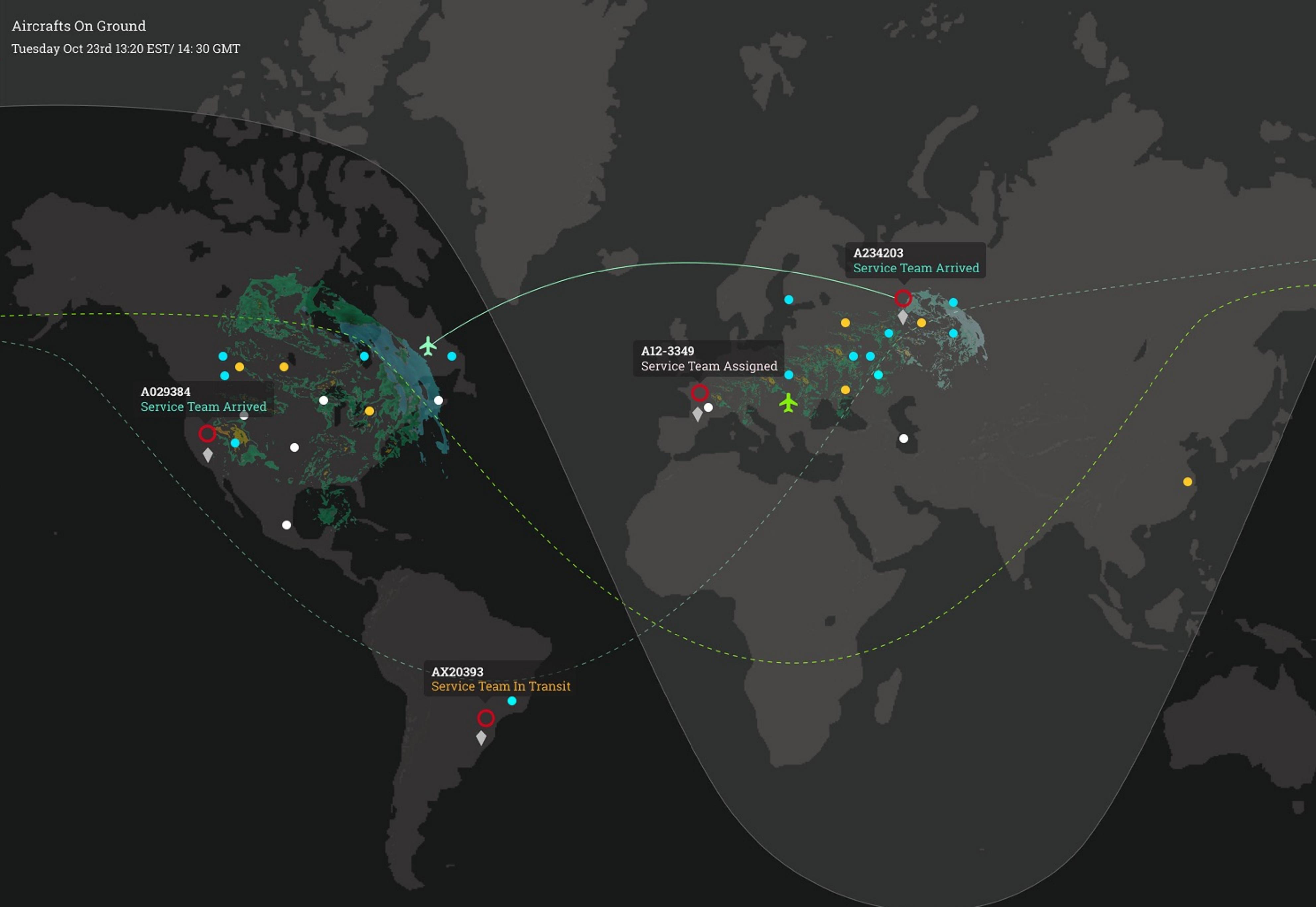...the primary condition of the patient? Secondary?
...e length of stay of the patient?
...ent's condition improving?
...e patient's mood, pain tolerance or disposition?
...e tenure of the provider?
...makeup of the provider's procedures?
...where did the doctor pass their medical bar?
...nurses were on staff?
...e tenure of the attending nurse?

...RGs or CPTs have a wide range in SU?
...RGs or CPTs have a big YoY increase in SU?

...n DRGs or CPTs have high volume?
...ch DRGs or CPTs have high supply usage?
...ch DRGs or CPTs have high supply usage per volume?

For a DRG, which patients are driving supply usage?
For a CPT, which providers are driving supply usage?
Which supplie did they use? How many? What's the cost?

M 1, 2, 3   T 1, 2   B 1, 2
M 4, 5   T 1, 2   B 1, 2
M 1, 2   D 11   T 1   B 1

M 1, 2, 5, 6, 7   D 1, 2, 3, 4, 5, 6, 7   T 1, 2   B 1, 2
M 4, 5   D 1, 2, 3, 4, 5, 6, 7   T 1

M 1, 2, 6, 7   D 9, 10   T 1, 2   B 1, 2

M 4, 8, 9   D 1, 2, 3, 4, 5, 6, 7, 8
T 1, 2
Available in different systems
D 9, 10, 13
M 10   D 13
Only availablt through medical chart notes
Only availablt through medical chart notes
D 12
D 12, 13   T 1, 2
Availability to be verified
Availability to be verified
Availability to be verified

M 1, 2   D 9, 10, 13   T 1
M 6, 7   D 9, 10   T 1, 2   B 1, 2

M 4, 5   D 9, 10   T 1
M 3   D 9, 10   T 1
M 1, 2   D 9, 10   T 1

M 1, 2   D 9, 13
M 1, 2   D 10, 12
M 8, 9   D 8, 12, 13

Measures

1. Supply Used per UOS $
2. Supply Used per Discharge $
3. Total Supply Used $
4. Count of UOS
5. Count of Discharge
6. Supply Used per UOS YoY %
7. Supply Used per Discharge YoY%
8. Supply Item Cost
9. Supply Item Quantity Used
10. Length of Stay

Dimensions

1. Hospital Service
2. Service Line
3. ↳Clinical Program
4. Supply Segment
5. ↳Supply Family
6. ↳Supply Class
7. ↳Supply Commodity
8. ↳Supply Item
9. DRG
10. CPT
11. Fiscal Month
12. Provider
13. Patient HAR

Timeframe

1. YTD
2. MTD

Benchmark

1. PYTD
2. PY MTD

BUSINESS GOAL   BUSINESS TASKS LV1   BUSINESS TASKS LV2   BUSINESS TASKS LV3   BUSINESS TASK LV4   DATA ELEMENTS

Process

Research

During research, I aim for as much information collection as possible through interviews, observational methods, surveys, shadowing, and more.

Initiate — Checkpoint — Checkpoint — Close

Understand + Define
Research

Diverge + Decide
Ideate

Prototype + Validate
Evaluate

Design Research Goals

Understand the Business

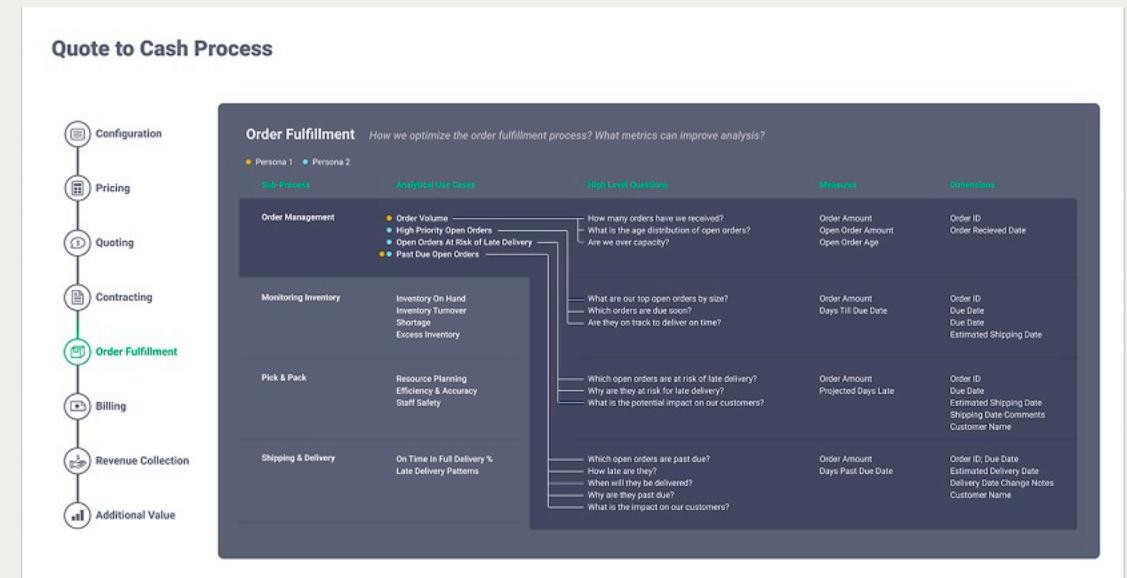**Business Model & Background**

- How does the business operate?

Business Function & Processes

- What are the key functions & processes that need to be measured?

Analytics Use Cases

- How are they measured and analyzed?
- How can analytics improve these processes?

Output Example: Process Map

Understand the People

Product Owner & Stakeholders

- How is success of this project/solution measured?

Users

- How can analytics fit into their workflow and enable them to take action?
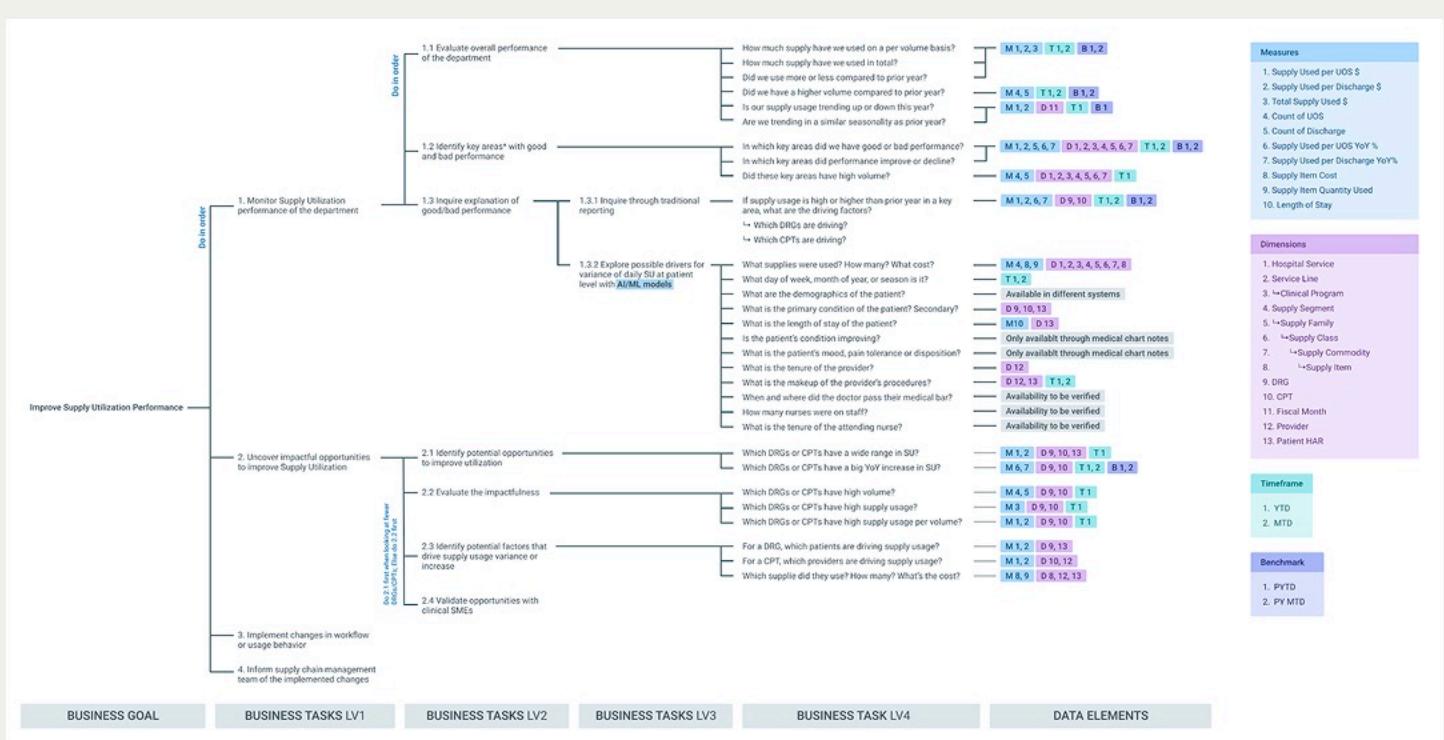
Output Example: Personas
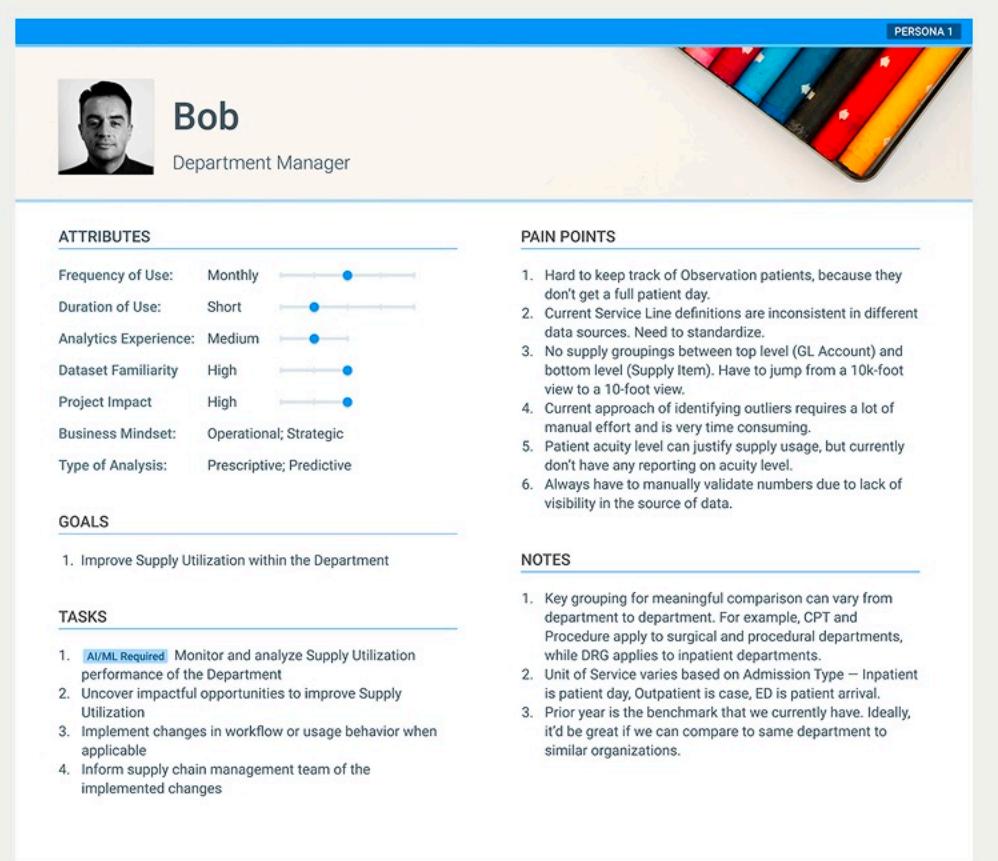
Understand the Data

Existing Tools, Dashboards, and Reports

- How is analytics done today?
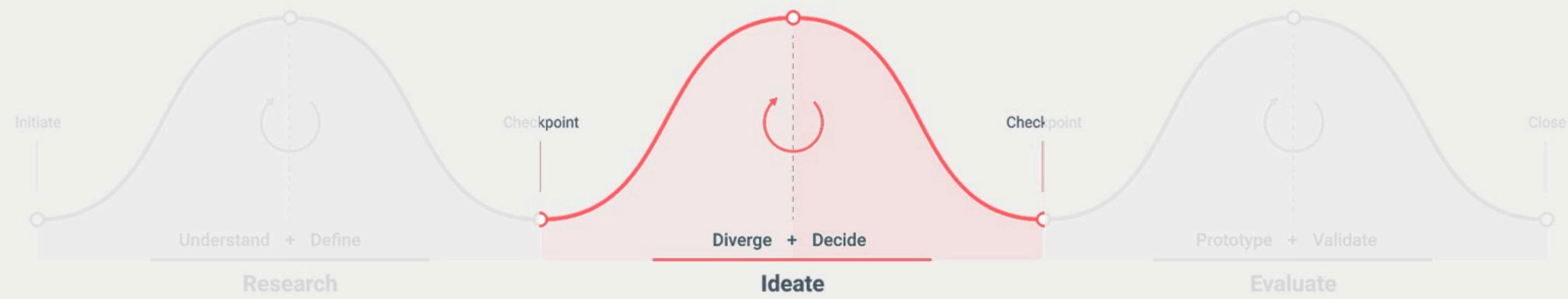- What are existing barriers or pain points?
- What is the analytics vision?

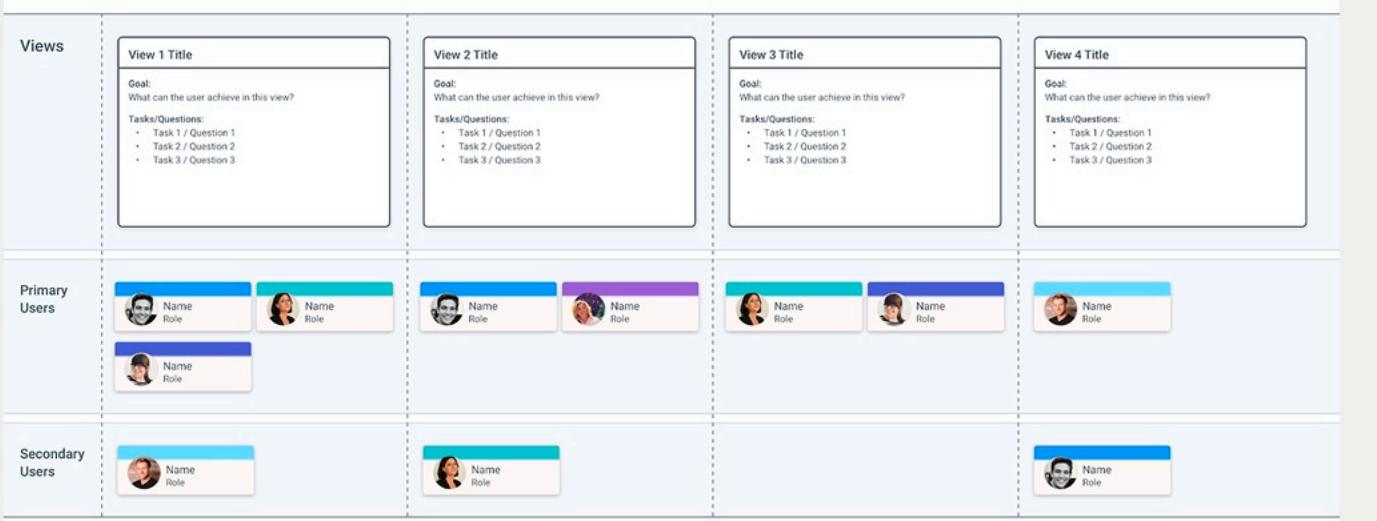**Output Example:** Data Task Map

Process

Ideate

Ideation focuses on delivering outputs for key, large wins first, and then working to round out the complex edge cases that provide value to users.
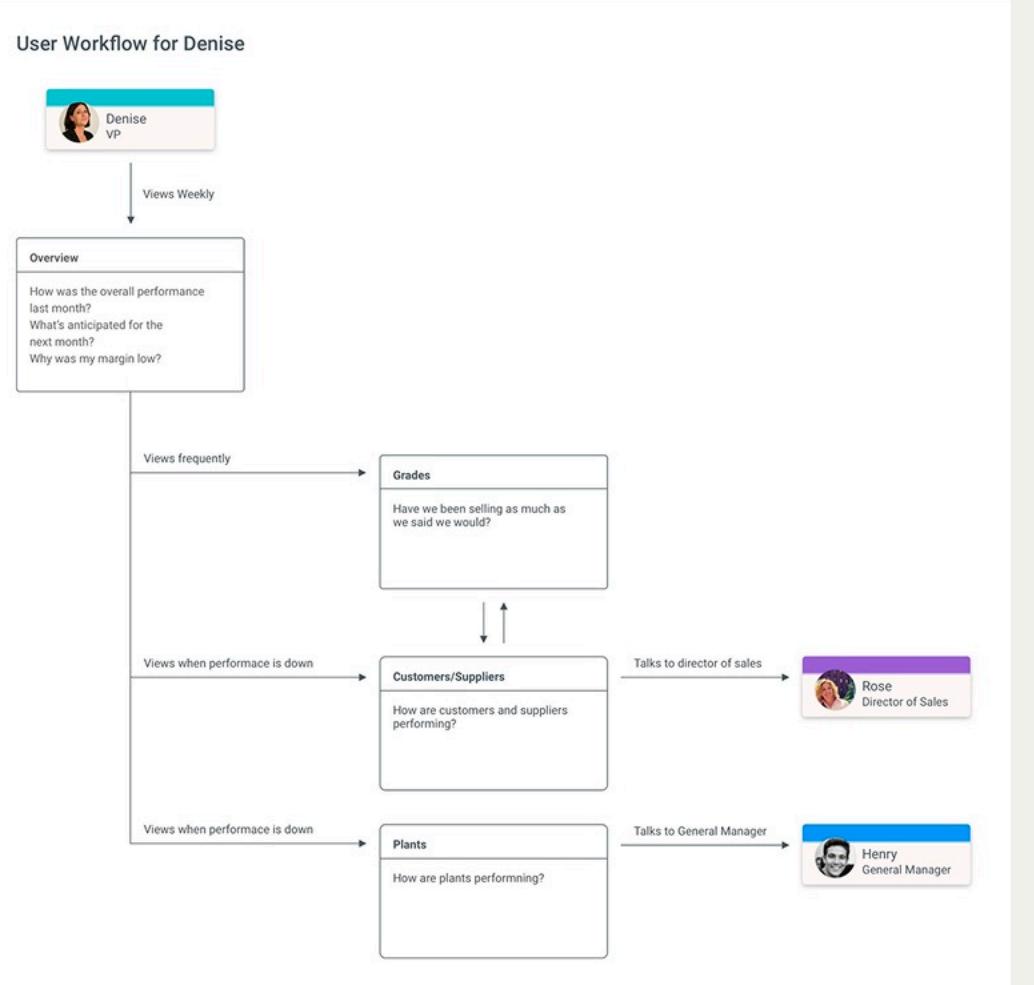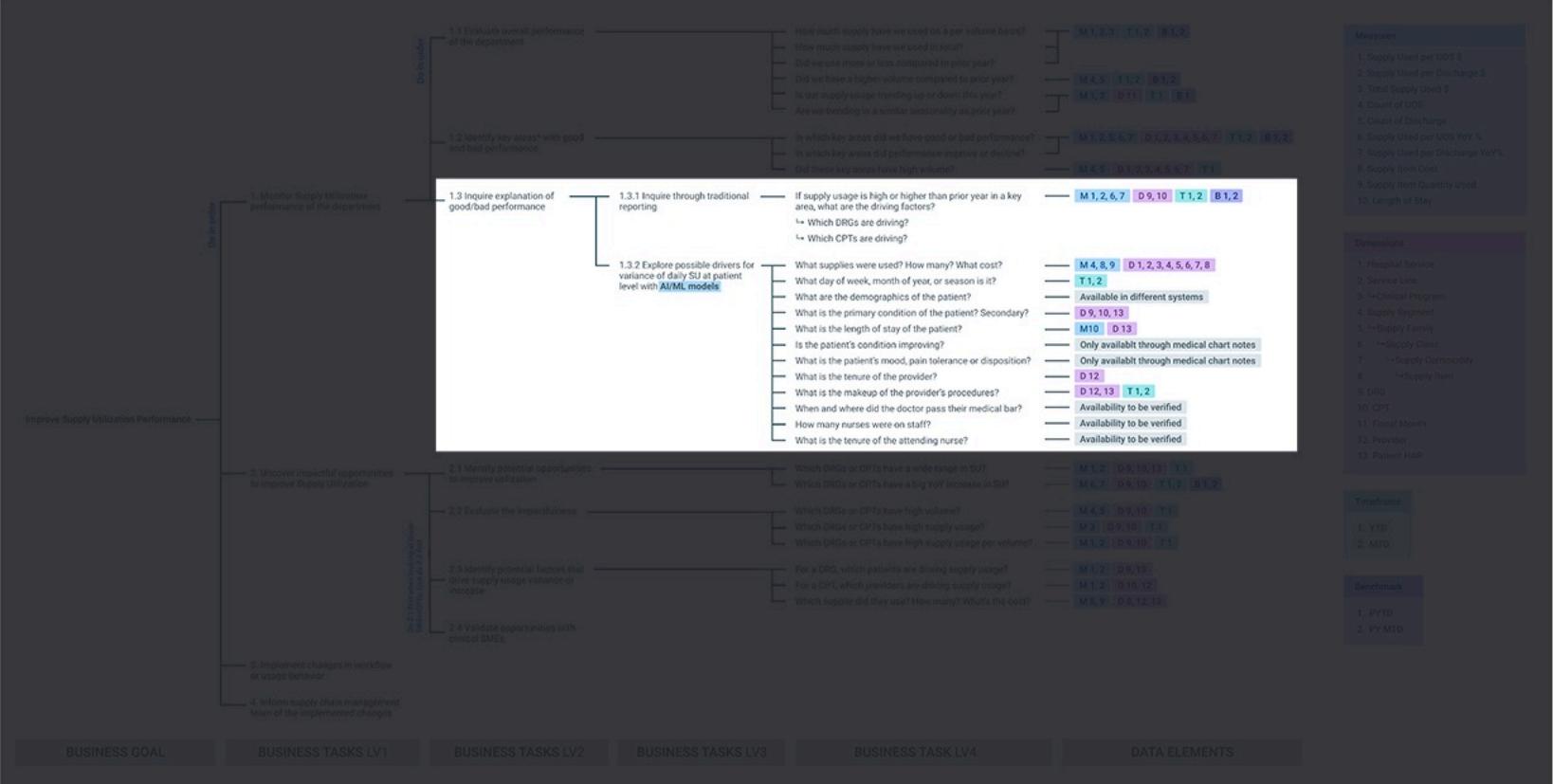

Initiate Checkpoint Checkpoint Close

Understand + Define   Diverge + Decide   Prototype + Validate

Research   Ideate   Evaluate

Ideation Goals

Define Users and User Groups

Establish Key Workflows

Refine Tasks to High Impact Areas

Process

Initiate   Checkpoint   Checkpoint   Close

Understand + Define   Diverge + Decide   Prototype + Validate

Research   **Ideate**   **Evaluate**

Evaluation Goals

Measure Business Impact

Assess Financial Streams

- Are costs reduced?
- Is revenue trending upwards?

Time to Decision Making

- Are answers to business questions easier and quicker to answer?

Tracking KPIs

- Does the new tool accurately provide insight to critical KPIs?
- Are these KPIs able to be more easily affected using the new tool?

Understand the People

Assess Workflow Ease

- Are users at all levels able to independently do their tasks?
- Have gaps in workflows been reduced?

Users

- Do users spend less time hunting down data?
- Do users spend less time externalizing questions, rather than drilling through the data?

Understand the Data

Data Accessibility and Governance

- Is data being provided to the right person at the right time in the right context?
- Does the user have access to the data they need?
- Is there a clear understanding of data processes and ownership within the organization?

Thank you!

I appreciate your time and consideration.

Bruno B. Berry