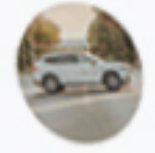


Scheduling Dashboard

Case Study



Dallas

Market Constraints & Inputs

Trips/Hour

1.2

Revenue/Trip

\$40/trip

Ave. Trip

30 min.

Max. Out Flow

13 shifts

Min. Shift Length

240 min.

Max. In Flow

12 shifts

Max. Shift Length

600 min.

Min. Vehicles

80

Cost/Shift/Hr

\$30/shift

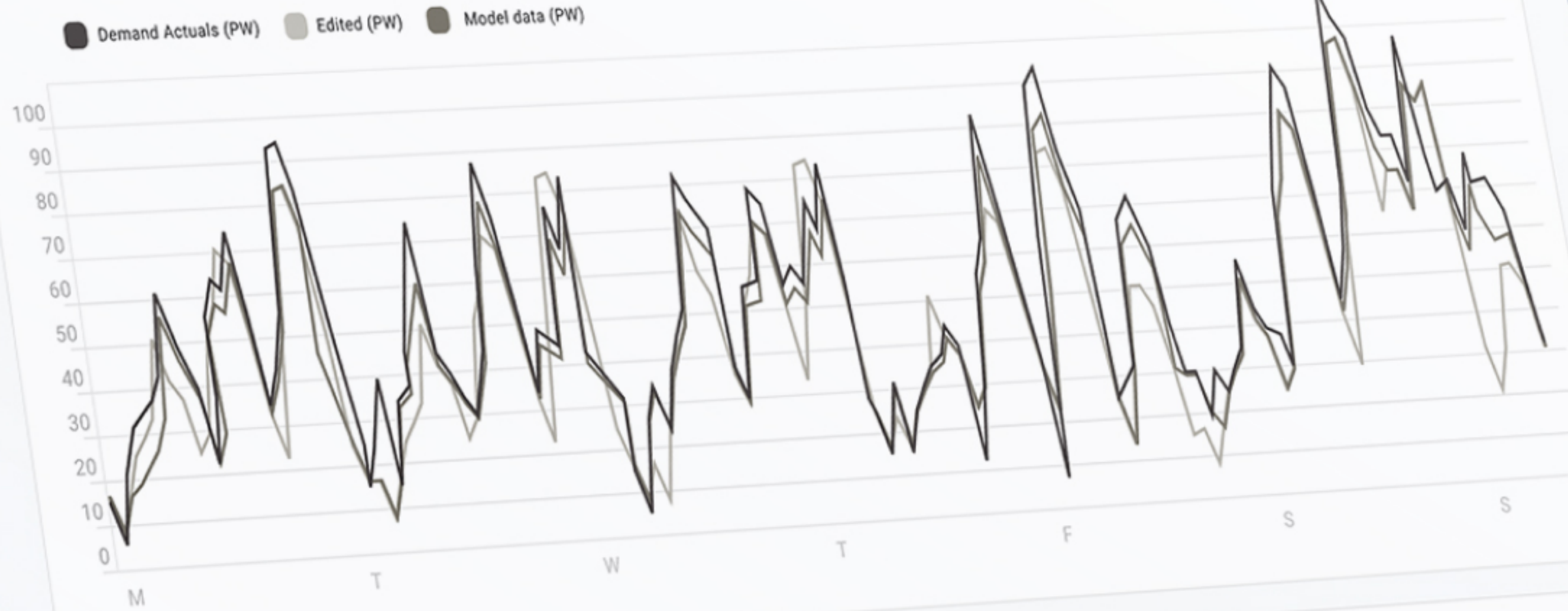
Max. Vehicles

145

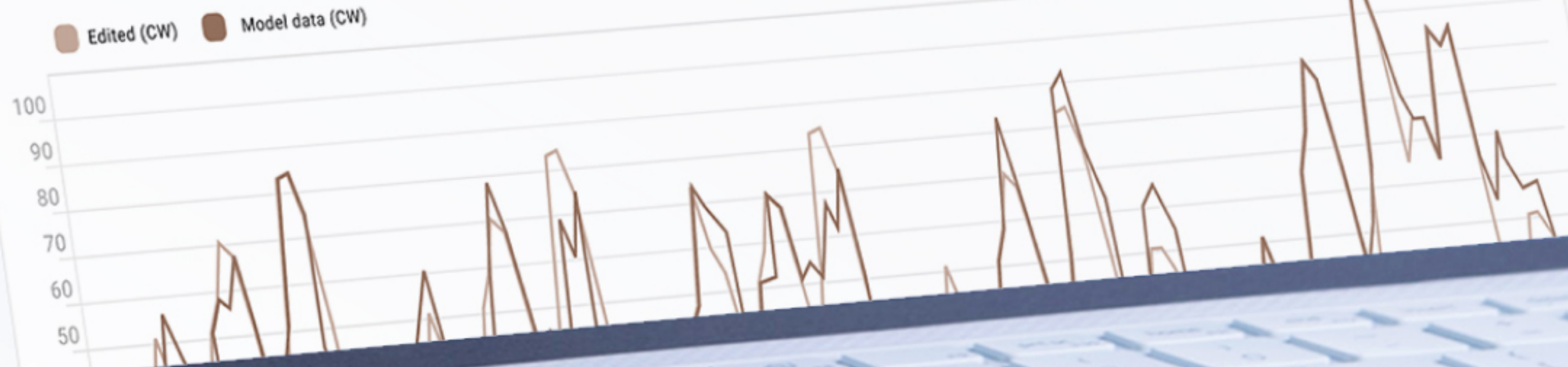
Overview: Monday, Sep 12 – Sunday, Sep 18 2022

Compared to 1 week ago: 9/5 – 9/11

Bookings per day: 9/5/22 – 9/11/22 (Previous Week)



Bookings per day: 9/12 – 9/18 (Current Week)



The setting: *Characters*

- UX/UI Designer (me!)
- Portfolio Director/Product Manager
- **Dev Team:** Senior Engineering Lead, Front-end & Back-end Developers
- **Stakeholders:** CEO, CTO, Operation Strategists
- **SME/User:** General Managers, Operation Strategists

The setting: *Manual processes*



Every week, driver schedules are tediously made by hand based on the guess work of multiple people

The rising action: *Discovery*



Lean UX Canvas (v2) Title of initiative: **Driver Experience - Shift Scheduling Structure Optimization** Date:

Business Problem
What problem does the business have that you are trying to solve?
(Hint: Consider your current offerings and how they deliver value, changes in the market, delivery channels, competitive threats and customer behavior.)

Solutions
What can we make that will solve our business problem and meet the needs of our customers at the same time? List product, feature, or enhancement ideas here.

Users
What types (i.e., personas) of users and customers? *(Hint: Who buys your product or service? Who uses it?)*

Hypotheses
Combine the assumptions from 2, 3, 4 & 5 into the following hypothesis statement: "We believe that [business outcome] will be achieved if [user] attains [benefit] with [feature]."
(Hint: Each hypothesis should focus on one feature only.)

What's the most important thing we need to learn first?
For each hypothesis from Box 6, identify its riskiest assumptions. Then determine the riskiest one right now. This is the assumption that will cause the entire idea to fail if it's wrong.

What's the least amount of work we need to do to learn the next most important thing?
Design experiments to learn as fast as you can whether your riskiest assumption is true or false.

Business Problem Details:
Shift structure today is a manual process and requires a significant lift and bottleneck. We're growing fast, so our current process is unsustainable. Our shift structure process is not scalable and will begin to fail as we open new markets. Missing the optimization of shift structuring will impact the spend.

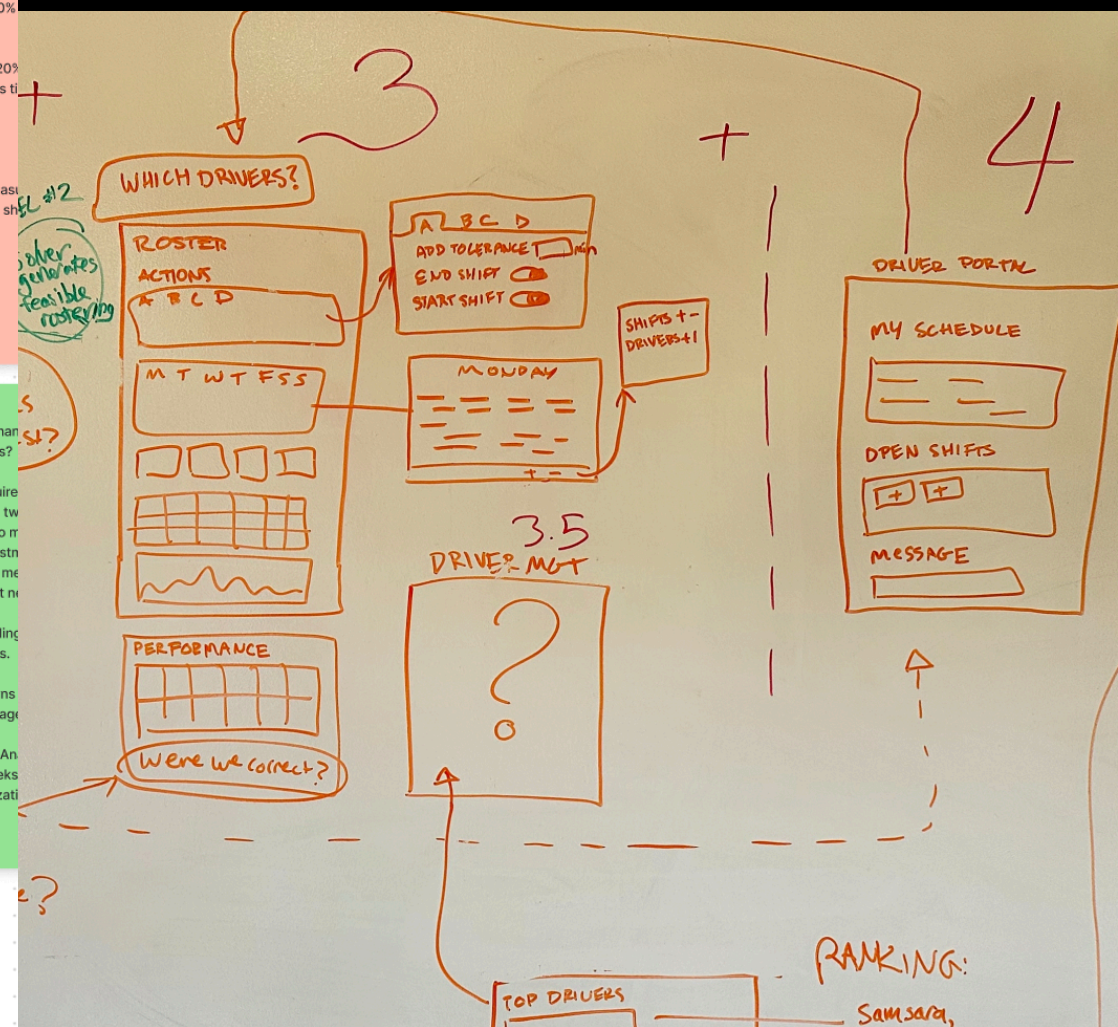
Solutions Details:
System will provide best structure based on limitations of drivers/cars. Question: What do we define as best? Replace Vanessa & Radha with a "true computer". Interface with demand prediction model from DataX gets loaded. Auto-create optimal shift structure from DataX, B2B, Mktg, etc. Ability to tweak shifts (add/edit/remove/extend) "Dial up/down". See what it will do with KPIs, results (dashboard). View history of past schedules with a machine learning aspect. Ability to recognize past against reality to support predictions modeling. Today: Ability to feed into PayCor for rostering. Optimal (unconstrained on vehicles/drivers) vs. realistic vs. actual shift structure. Can see discrepancy on KPIs. Post analysis.

Users Details:
Most important? Ops Manager / Leader. Front-line focused Staffing/scheduling. General Manager. Higher level decisions. Reviews, accountable for results. ADAM: Market GM is first and foremost to build for this user. VP of Ops. All GMs report to VP. Adam's team of analysts (Vanessa & Radha). Currently providing service. Can analyze further results after this is updated. Marketing. Carlos Torres.

Hypotheses Details:
We believe that "the on demand creation of an optimized schedule within 15 minutes" will be achieved if the "ops team" attains "the ability to have more ownership and control over the scheduling process" with "a schedule planning tool that optimizes the expected shift slots per metric targets". We believe that "we can determine the root reason for failure" will be achieved if the "ops management" attains "the ability to see analytics from increments of time to confirm trends over time" with "viewing history of past schedules with a machine learning aspect". We believe that "the analysts no longer being involved in scheduling" will be achieved if "the ops team" attains "more ownership of the scheduling process" with "the automated scheduling system". We believe that trust will be achieved if ops attains "the ability to successfully do a post analysis of the week".

User Outcomes & Benefits Details:
Benefit: As an analyst, I would be able to no time structuring the shift scheduling and be able to analyze the end results for fulfilling other job duties. Benefit: Robust system would provide stronger ground to "push" team on inputs. Benefit: Ability to from inc confirm (did we low?). Benefit: Better chance of meeting KPIs using structure from new. Benefit: As an ops manager, I have more control on the scheduling process. Benefit: Mechanical system optimizing forecast GM has a baseline start from system to understand where they're landing. Benefit: Data to analyze and further optimize. Behavior change: Analysts (Vanessa & Radha) are no longer involved in scheduling. Ops Managers has confidence in editing the scheduling. Benefit: is an Ops Manager, I have more ownership and control over the scheduling process. Question: Do we allow managers to edit schedules? Concern: Direction require to make small tw Why: Ability to r accurate adjust schedule and me demand aren't n strategic. Concern: Adding increase hours. Opportunity: Local unknowns a market manage know. Opportunity: An manager tweaks where optimizati follows.

What's the least amount of work we need to do to learn the next most important thing? Details:
Quality of input data (demand). Rendering output. Learning where to display the output of scheduling for the ops team for rostering. How to import into Paycor.



The rising action: *Discovery*

Insights

Managing driver availability is a significant time suck that if not done regularly and accurately contributes to driver call out and **schedule failure**

Heather Stiles

All personas claim processes are time consuming and prone to human error

Heather Stiles

All personas crave greater visibility as to how their scheduling decisions will influence key metrics

Heather Stiles

The rising action: *Discovery*

Needs

1. As an Alto operations manager, I need a reliable and automated way to predict rideshare demand
2. I then need a way to convert that demand to number of drivers on the road for a given time period

The rising action: *Discovery*

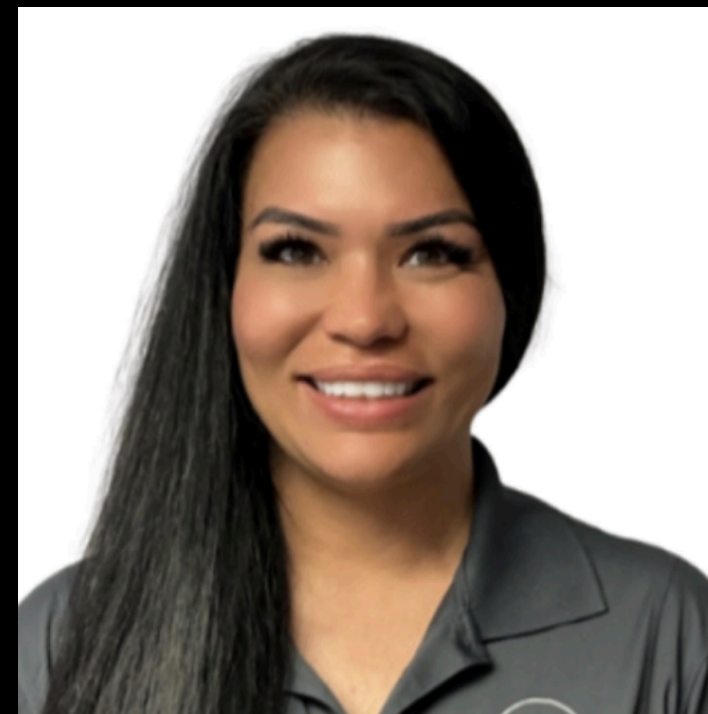
Hypothesis

If an Ops. Manager has the ability to export a weekly AI-generated schedule in 15 minutes or less, it will result in less wasted man hours for both operations and drivers.

The conflict: *Who is our user?*

General Manager

“Boots on the ground”



VS

Operations Strategist

“HQ”



The rising action: *Build & test*

Buttons

- STATES
 - UNPLANNED
 - PLANNED
 - OCCURRED
- DATA EXPORT
 - Don't forget B2B
 - B2C separately
 - NICE TO HAVE
- ADD
 - EVENTS
 - OTHER
- CONSTRAINTS
- MARKET TOGGLE ONLY BY ADMIN

As an Ops Manager,
I can plan — days in the future,
so that I can export to Paycor for rostering.

COMPARE TO

PP05: more empty slots on the screen. CENS: scrolling only be limited.

PP05: MULTI-COMPARE FILTERS (B2B one link to B2B one link)

CENS: SCROLL TO SEE EVERYTHING

→ Ops fills out r roster from this.

UX INTERVIEWS

→ 15 min. vs. hour increments

1. Base Demand B2B B2C

2. EVENTS

3. CUSTOM

4. Vehicle

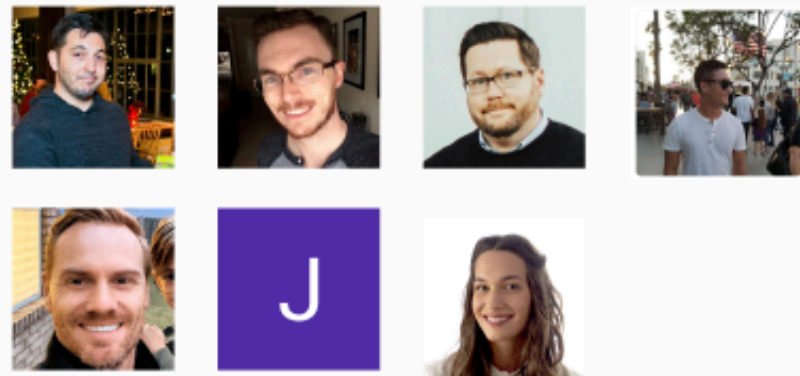
5. Callout

6. Pay Basic

Standardize edit UI for 2, 3, 5, 6.

The rising action: *Build & test*

Tech Sync: Aug 8



Review Focus: Editing UI & future focus

Key Feedback:

Keep track of delta

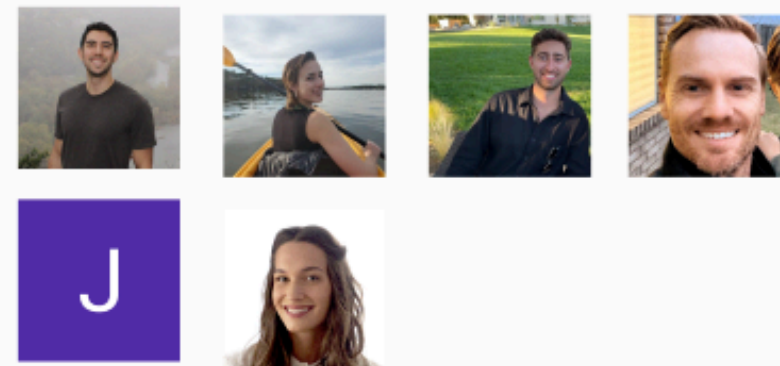
Maybe not Bulk edit...? But select multiple would be good

Gray out not included demand input types

Prototype out switching markets and switching days from scheduling view

Think about how to compare forecasted, estimated

Pod usability review: Aug 11



Review Focus: Editing UI for Demand Forecast

Key Feedback:

Sev:

I would like the Ability to edit vehicle counts.

Editability is less important, just knowledge that it is being included

Demand transform

Can we have both up/down and click in to edit? (Vanessa agrees)

Up/Down is fine, but increment isn't one. Percentage change is weird

I Like the look of the new version way better. Looks way cleaner

Like the bulk edit

Would like to keep UI edit simpler

LA can do 1.x - 2.x demand per hour (velocity) (demand per shift per time window)

What inputs go into the optimizer?

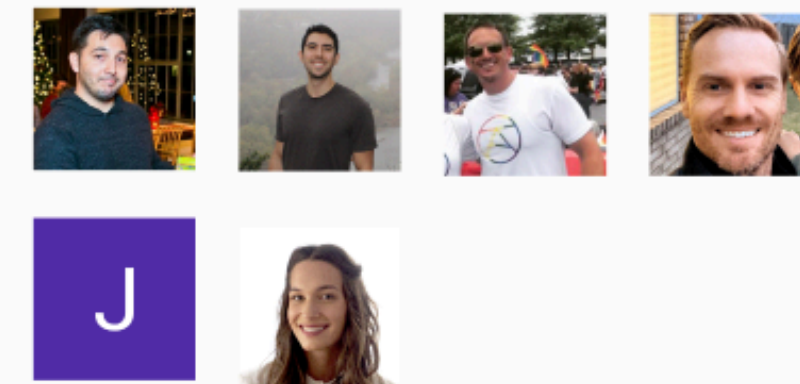
Understanding the relationship between X and Y:

- X: End total number of bookings
- Y: Number of shifts, How accurately

What evidence do I have to verify the accuracy?

Changes are much more difficult after the fact

Stakeholder check-in: Aug 11



No new feedback

The rising action: *Build & test*



“Those metrics are not helpful”



“That graph makes sense, matches the other reports we use”

Dallas

Overview: Monday, Sep 12 – Sunday, Sep 18 2022

Day	Saved Snapshot	Total Est. Bookings	+/- Bookings	Total Shifts	Total Hrs	FTE	Ave Hr/Shift
M 9/12	Dana D 9/3/...	562	+33	105	607.25	16	5.78
T 9/13	Mike C 9/9/...	354	+10	86	425.34	12	4.94
W 9/14	Adam V 9/8/...	966	+28	104	1056.98	22	10.15
T 9/15	Vanessa S 9/...	1,052	-40	135	1278.30	25	9.47
F 9/16	Adam V 9/9/...	642		92	703.40	17	6.97
S 9/17	Adam V 9/4/...	402	+22	98	503.34	15	4.10
S 9/18	Vanessa S 9/...	834	-15	122	987.53	19	8.09
Totals		4812	+25	650	4355.40	109	6.07

Download Booking Data | Export all schedules | Run all schedules

Monday, Sep 12 2022

Monday, Sep 12 2022

Hour	Bookings	+/- Bookings	Shifts
3am	6	+2	6
4am	2		2
5am	7		7
6am	20	+5	20
7am	11		11
8am	14		14
9am	8	-5	8
10am	10	+5	10
11am	7		7
12pm	13		13
1pm	9		9
2pm	5	-4	5
3pm	5	+1	5
4pm	5	-5	5

Daily Constraints & Inputs

Hours of Operation: 3am-12pm
AM Rush Hour: 7am-9am
PM Rush Hour: 4pm-9pm
Call Out %: 6%

Market Constraints & Inputs

Trips/Hour: 1.2	Revenue/Trip: \$40/trip
Ave. Trip: 30 min.	Max. Out Flow: 13 shifts
Min. Shift Length: 240 min.	Max. In Flow: 12 shifts
Max. Shift Length: 600 min.	Min. Vehicles: 80
Cost/Shift/Hr: \$30/shift	Max. Vehicles: 145

Dallas

Overview: Monday, Sep 12 – Sunday, Sep 18 2022

Market Constraints & Inputs

Trips/Hour: 1.2	Revenue/Trip: \$40/trip
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Max. Shift Length: 600 min.	Min. Vehicles: 80
Cost/Shift/Hr: \$30/shift	Max. Vehicles: 145

Bookings per day: 9/5/22 – 9/11/22 (Previous Week)

Bookings per day: 9/12 – 9/18 (Current Week)

Hours

PW	CW
55.2k	56.3k

Previous vs Current Week total hours

Shifts

PW	CW
742	758

Previous vs Current Week total shifts

FTE

PW	CW
127	126

Previous vs Current Week total FTE

Estimation error

PW Edited	PW Model
-15%	-6%

Demand actuals vs. estimates

The climax: *Release (slowly) to markets*

Shift Scheduling: All Markets

Search

DALLAS



Select the time frame you would like to plan

+1 week

+2 weeks

Specific dates

LOS ANGELES



Select the time frame you would like to plan

+1 week

+2 weeks

Specific dates

HOUSTON



Select the time frame you would like to plan

+1 week

+2 weeks

Specific dates

Performance Metrics: All Markets

Occupancy

53%

Completion Rate

90%

On-Time Rate

68%

< Sep 5 – Sep 11 >

MIAMI



DC



SAN FRANCISCO



Scheduling Metrics: All Markets

Estimation Error

PW Edited

-15%

PW Model

-6%

Previous Week (PW) Demand Actuals vs. Edited & Model Estimates

The falling action: *Results*

- **Positive:** Reduced schedule creation time from 20+ hrs to 1-2 hrs
- **Positive:** Scheduling data now trackable
- **Negative:** We picked the wrong user!



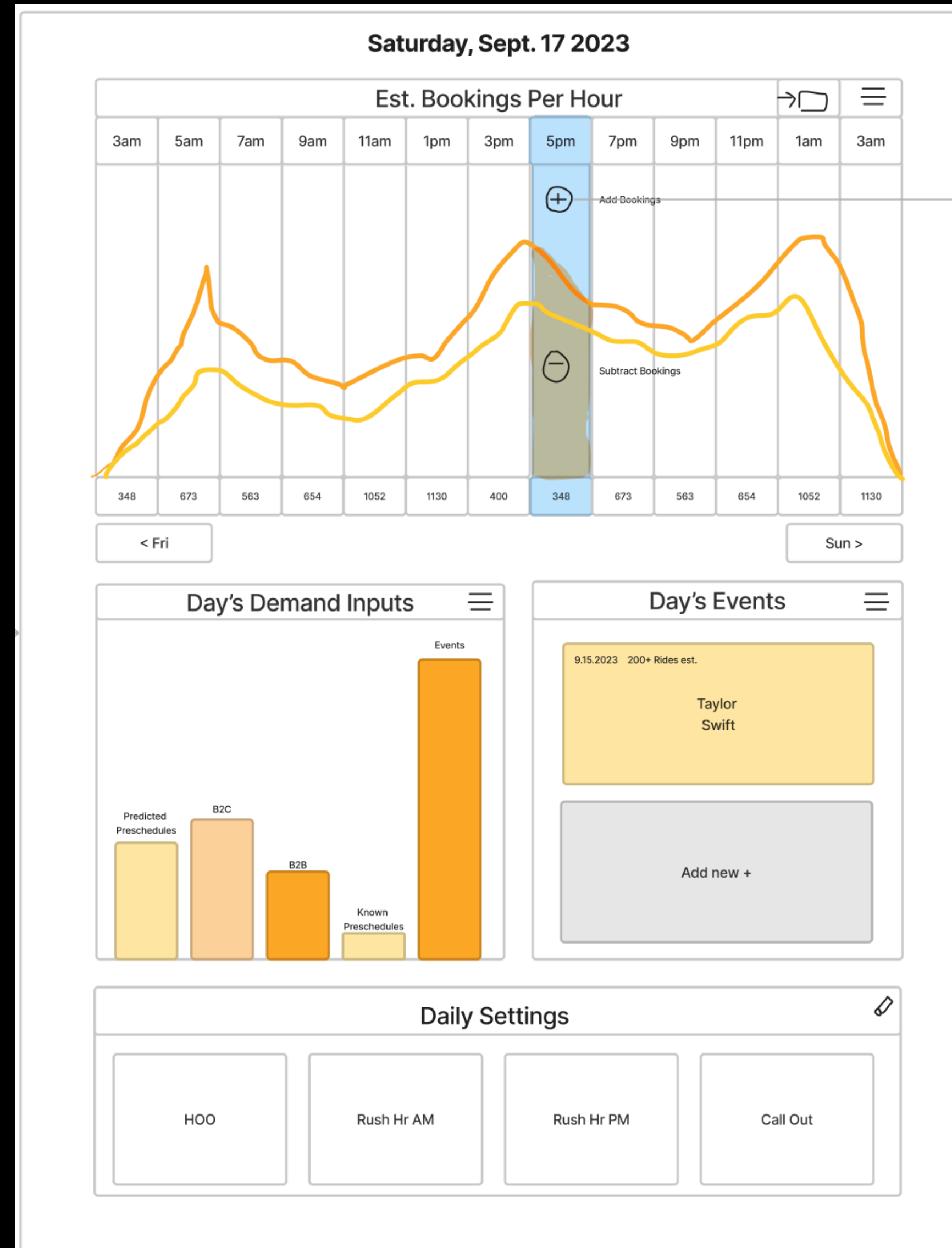
VS

Operations Strategist

"HQ"



The falling action: *Continued feedback*



The conclusion: *Learnings*

- If your stakeholders are not aligned, there will be rework
- Designing the right level of complexity for your user requires thorough discovery work
- Designing for AI & machine learning requires careful strategy

Thank you!