



Finding the Driver's Utility

The World leader in AI-driven supply chain transformation

FOURKITES

Role: UX Lead Designer / UX Manager

- Led UX strategy and design for the complete redesign
- Ran cross-functional discovery with data science, carrier integration, and maritime operations teams
- Designed the data confidence model and milestone taxonomy that became foundation for future features
- Created information architecture, user workflows, interactive prototypes, and final UI
- Collaborated closely with engineering through implementation and launch
- Conducted customer research and usability testing throughout development

Challenge: Redesign container tracking to handle the complexity of ocean freight workflows

Finding Utility for Drivers

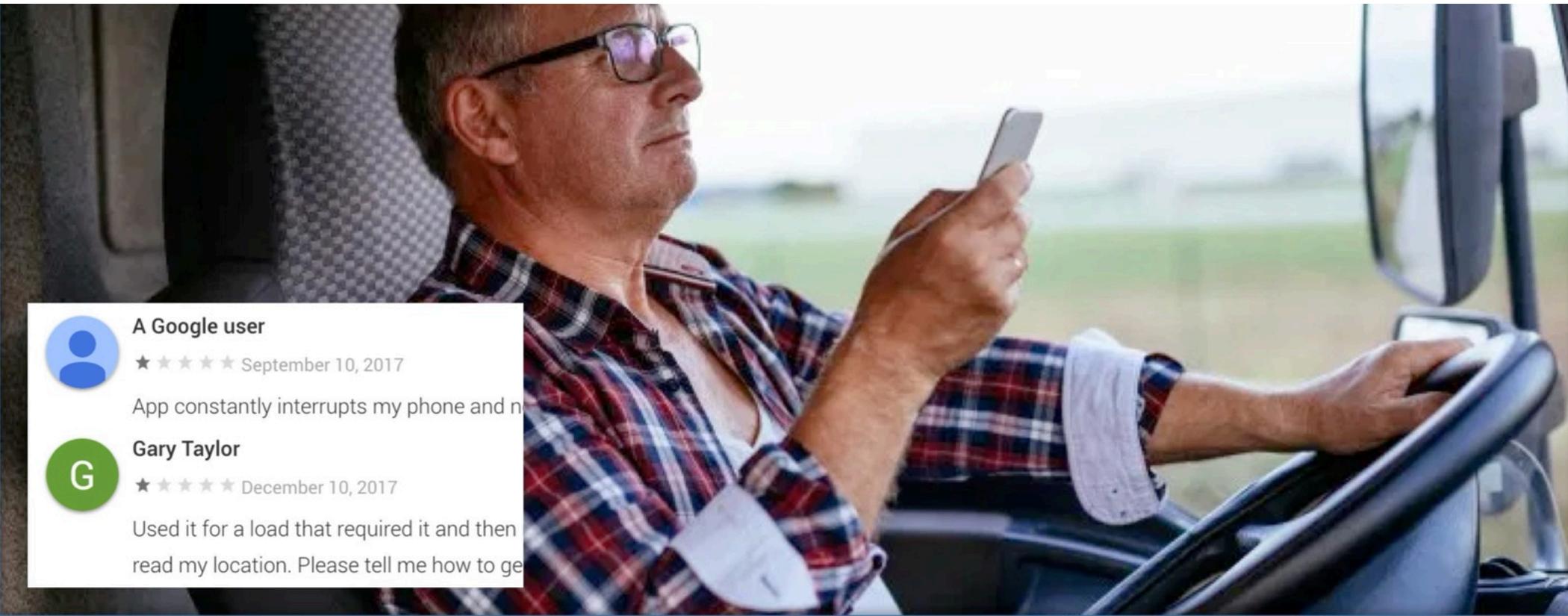
FourKites

Peter Bartsch / Professional Portfolio / UX Case Studies

OVERVIEW

FourKites provides real-time supply chain visibility, but drivers (the people physically moving shipments) often struggled to find value in the mobile tools built for them. Many saw tracking apps as additional work rather than a source of benefit.

This case study covers how I helped FourKites identify what drivers actually need and designed a mobile experience that delivers real utility while supporting shipper visibility requirements



A Google user

★★★★★ September 10, 2017

App constantly interrupts my phone and n



Gary Taylor

★★★★★ December 10, 2017

Used it for a load that required it and then
read my location. Please tell me how to ge

PROBLEM

Although shippers depend on accurate driver location to track freight, drivers had little incentive to use the existing app.

No clear value proposition

The app mostly served shippers, not drivers. Check in, share location, upload documents. What did drivers get in return? Nothing visible. It felt like unpaid labor.

High-friction tasks

Manual check-ins, status updates, and document uploads felt like busywork. Drivers already had enough to do. Adding app tasks on top of driving, loading, and navigating facilities created resistance.

Inconsistent workflows

Drivers move between different shippers, each with different expectations. One shipper wants arrival notifications, another wants photos of every seal, a third wants constant location updates. No standardization meant constant confusion.

Privacy and trust issues

Many drivers worried about being tracked outside working hours or misunderstood based on location data. "Are they watching me take lunch? Timing my bathroom breaks? Will I get blamed if traffic makes me late?"

Low adoption led to low data quality

When drivers didn't use the app consistently, location data was spotty. This resulted in inaccurate ETAs, which led to more customer escalations, which created more pressure on drivers to use the app, which increased resistance. Vicious cycle.

The fundamental problem:

We built a surveillance tool and wondered why drivers didn't embrace it. To improve data quality and customer outcomes, we first needed to redesign the experience so drivers wanted to use it.

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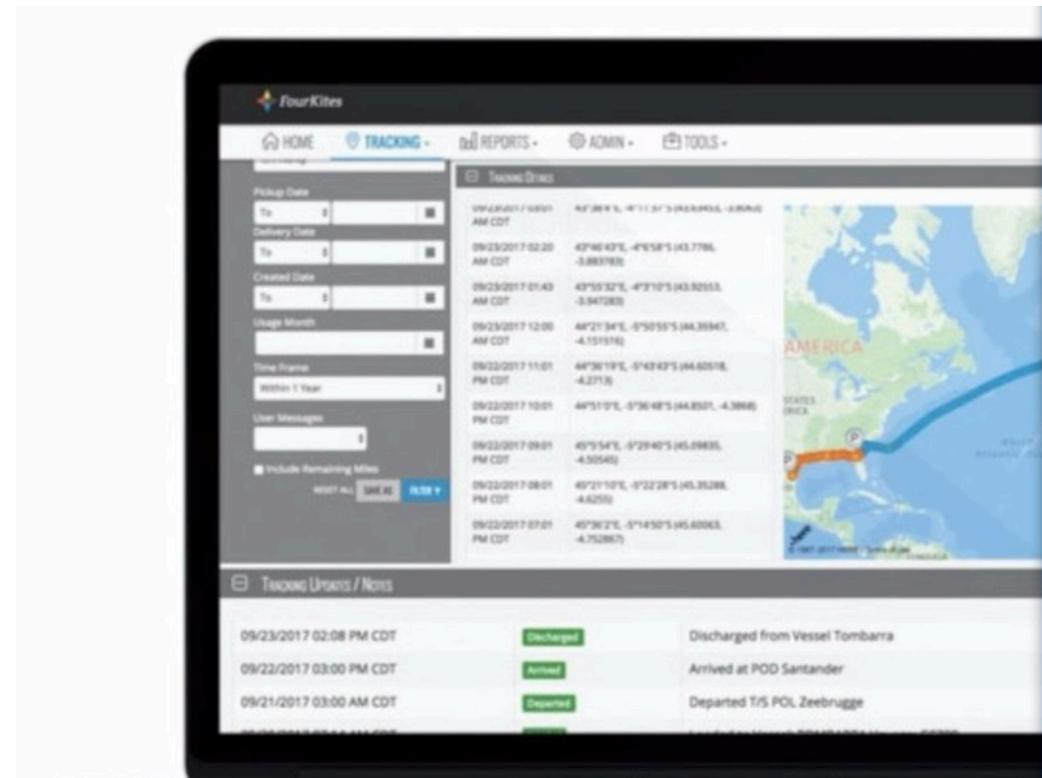
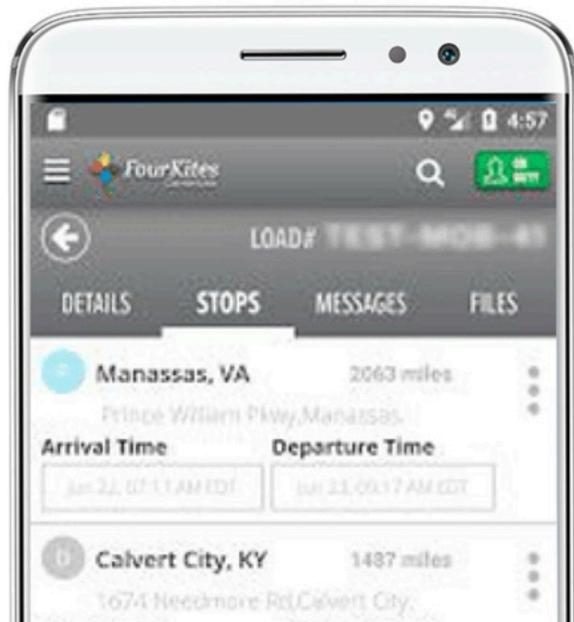
GOAL

Create a mobile experience that:

- Provides clear, immediate utility to drivers (not just their employers)
- Reduces manual workload instead of adding to it
- Builds trust and transparency around tracking
- Simplifies common tasks like arrival, departure, and document capture
- Supports both independent owner-operators and fleet drivers with different needs
- Improves data quality and compliance behind the scenes (as a byproduct of utility)

The shift in mindset:

Stop thinking about what we need from drivers.
Start thinking about what drivers need from us.



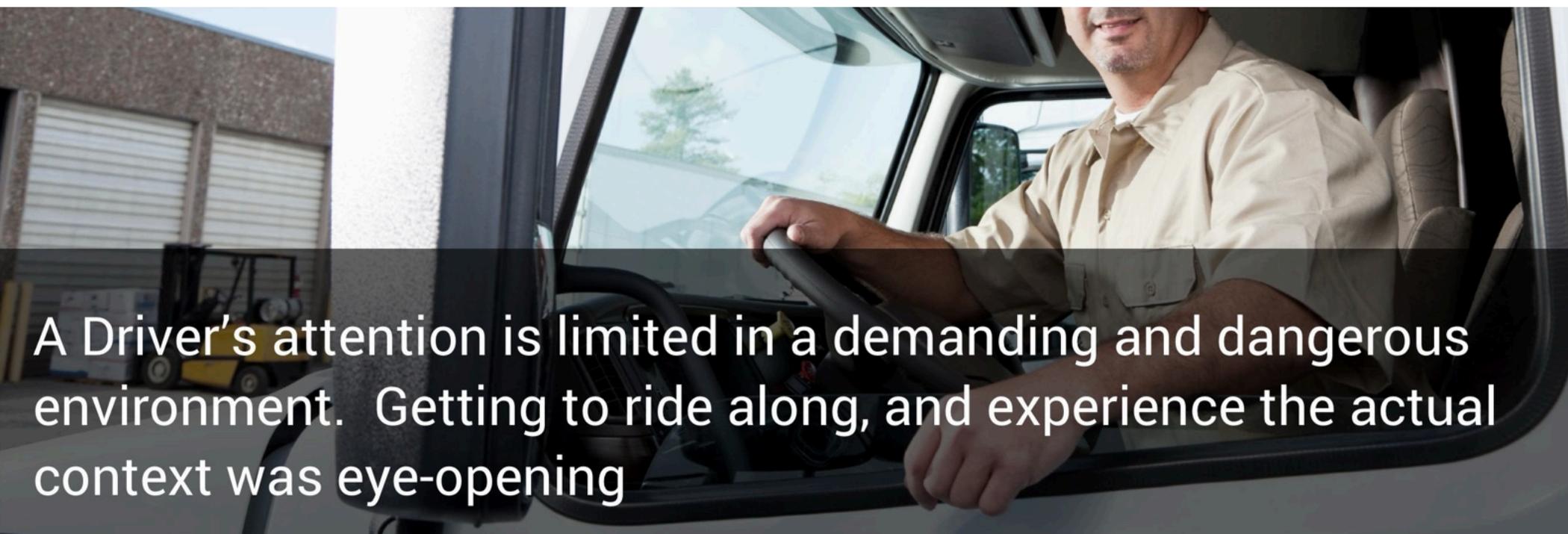
APPROACH

1. Talking to Drivers (Deeply and Directly)

I conducted interviews with:

- Long-haul truck drivers (cross-country routes, living in their trucks)
- Regional drivers (same-day or next-day routes, home nightly)
- Owner-operators (independent contractors who own their trucks)
- Dispatchers and fleet managers (coordinators who assign loads and manage drivers)

We shadowed workflows at truck stops, during yard check-ins, and while drivers were waiting at facilities. Saw their actual working conditions, not our assumptions about them.

A photograph showing a driver from the chest up, sitting in the driver's seat of a truck. The driver is wearing a light-colored, short-sleeved button-down shirt and is holding the steering wheel with both hands. The view is from the passenger side, looking into the cab. Outside the window, a brick building with white roll-up doors and a yellow forklift are visible. The lighting is bright, suggesting daytime.

A Driver's attention is limited in a demanding and dangerous environment. Getting to ride along, and experience the actual context was eye-opening

APPROACH

What we learned:

Drivers care most about:

- Saving time
- Every minute matters.
- Faster check-ins mean more loads per day.
- Less waiting means getting home earlier.
- Time is literally money.
- Shortening dwell and detention

Sitting in a yard waiting to be loaded or unloaded is unpaid time (usually). Detention pay exists but requires documentation and fighting for it. Anything that reduces wait time or proves detention is valuable.

Avoiding surprises

Closed gates when GPS said open. Unexpected appointment requirements. Facility full, come back in 4 hours. Long lines at check-in. These surprises destroy schedules and earnings.

Keeping paperwork simple

Bills of lading, proof of delivery, lumper receipts, inspection reports. Paper everywhere. Anything that reduces paperwork friction helps.

Maintaining control of their privacy

Drivers are independent professionals, not warehouse employees. They resent being tracked like packages. They want transparency about what's shared and control over when tracking happens. These insights shaped our design direction.

Key quote from driver interview:
"I'll use your app if it makes my day easier. I won't use it if it's just one more thing my dispatcher wants me to do."

Finding Utility for Drivers

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APPROACH

2. Identifying Driver-Centered Utility

Drivers said they would use an app that helped them:

Get in and out of facilities faster

Know gate codes before arrival. See wait times based on real data. Get directions to the right dock. Skip the check-in line if possible.

Know exactly what to expect at pickup/delivery

Appointment requirements, hours of operation, special instructions, what paperwork is needed. Remove uncertainty and wasted trips.



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APPROACH

2. Identifying Driver-Centered Utility (Cont.)

Track detention and protect earnings

Automatic timestamp when they arrive and when they leave. Proof of wait time. No more arguing with dispatch about detention pay.

Reduce phone calls and repetitive questions

"Where are you?" "When will you arrive?" "Did you deliver yet?" Constant interruptions while driving. If the app answers these questions automatically, that's valuable.

Simplify document management

Take a photo of the BOL and be done. No scanning, no faxing, no keeping paper for 7 years. Digital copies accessible anytime.

These became core value propositions



APPROACH

3. Defining the "Must-Have" Experience

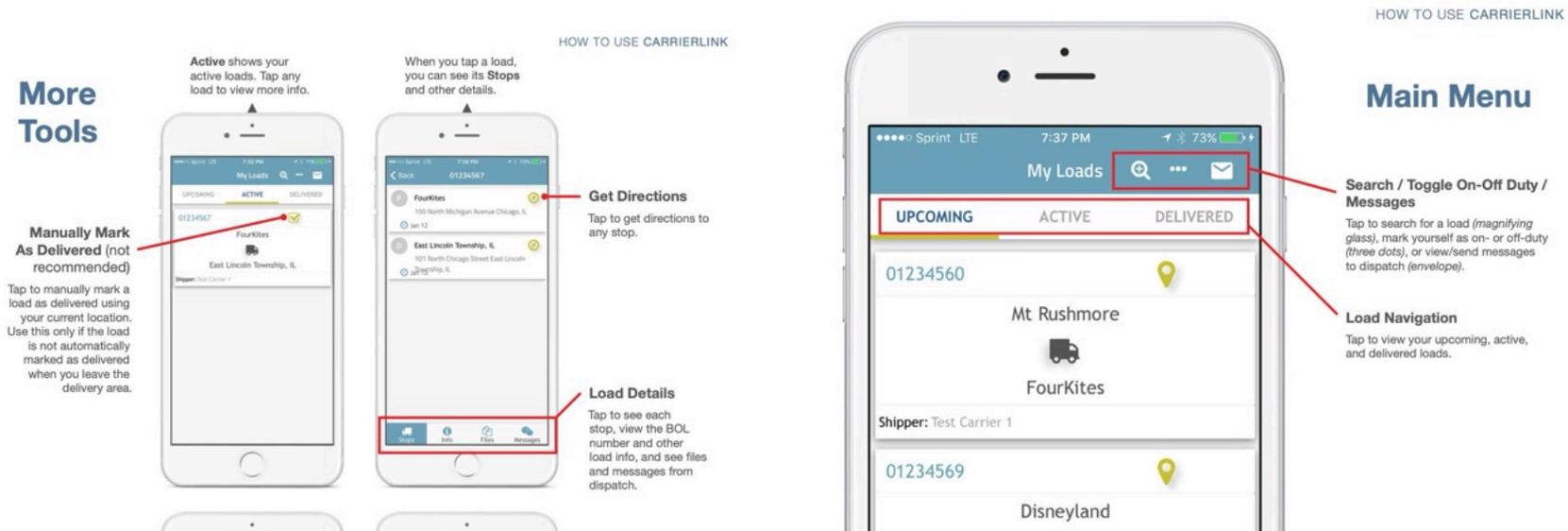
We focused the experience around the moments where drivers feel the most friction:

Arriving at a facility

Where do I go? Which gate? Is my appointment confirmed? What's the wait time? Do I need special paperwork?

Waiting (often with poor communication)

How long until they call my truck? Can I leave to get food? Am I accruing detention time? Why is this taking so long?



APPROACH

3. Defining the "Must-Have" Experience (Cont.)

Getting updates from brokers/dispatch

Constant phone calls asking for status. Requests to send photos. Demands for ETAs while actively driving.

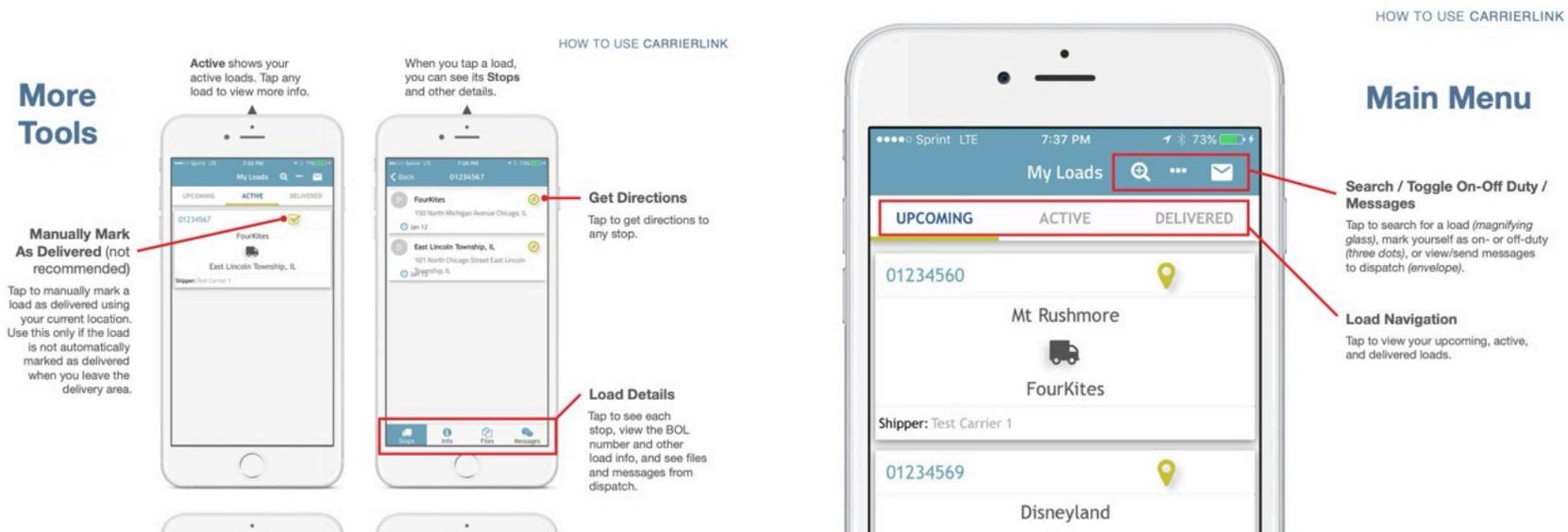
Capturing proof of delivery, bills of lading, and lumper receipts

Fumbling with phone camera, poor lighting, unclear what needs to be captured, uploading takes forever on facility WiFi.

Planning the next leg of the trip

Where am I going next? When? How long will it take? Where can I park overnight if this runs late?

By designing for the "pain moments," the app naturally becomes more useful. We weren't adding features. We were removing obstacles.



APPROACH

4. Designing Trust Into the Experience

To address privacy concerns, I designed:

Clear on/off tracking indicators

Big, obvious toggle. When you're on a load, tracking is on. When load is delivered, tracking stops. No ambiguity about when location is shared.

Explicit explanations of what is shared, when, and with whom

"Your location is currently being shared with [Shipper Name] and your dispatcher. Sharing will stop when you mark this delivery complete."

A driver-facing timeline that shows the same updates shippers see

Drivers can see exactly what their customers see. No hidden information. This builds trust because there's no mystery about what's being reported.

Controls that stop sharing when the load is complete

Automatic tracking shutoff after delivery. Drivers control when to start tracking for the next load. No always-on surveillance.

Education about why tracking matters

Not "we need to track you" but "accurate location helps shippers plan dock schedules, which reduces your wait time." Frame tracking as mutual benefit.

Transparency builds confidence, and adoption follows! Drivers used the app more consistently when they understood and controlled what was shared.



APPROACH

5. Reducing Friction

We simplified the highest-friction tasks:

Auto-arrive and auto-depart events reduce manual taps

Geofencing detects when driver enters facility. System logs arrival automatically. Driver can override if needed, but default is zero effort.

Guided workflows reduce confusion

"You've arrived at [Facility]. Here's what to do next: 1) Check in at gate 3. 2) Proceed to dock 14. 3) Upload BOL after loading." Step-by-step clarity.

Camera-first document capture speeds up uploads

App opens directly to camera when driver needs to capture a document. One tap to photo, automatic edge detection and enhancement, instant upload. No fumbling through menus.

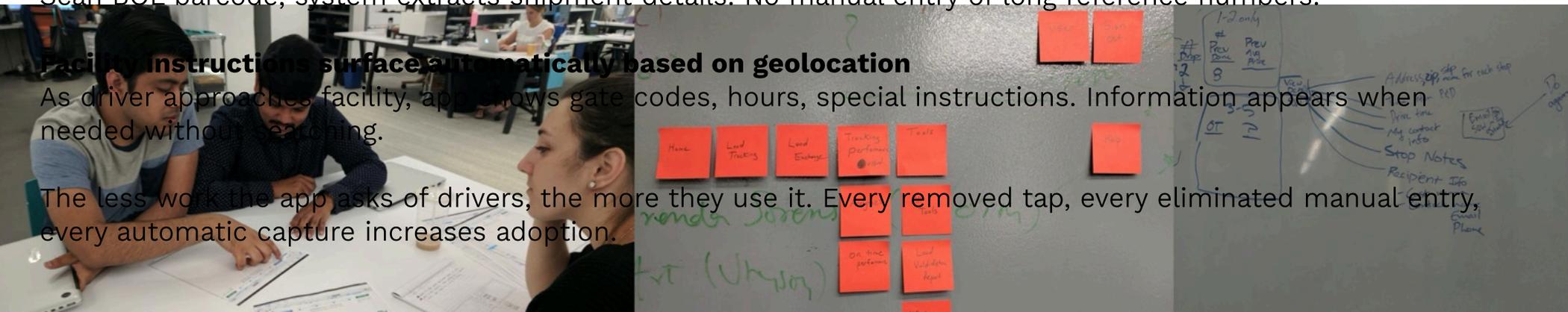
Barcode scanning and auto-extraction reduce typing

Scan BOL barcode, system extracts shipment details. No manual entry of long reference numbers.

Facility instructions surface automatically based on geolocation

As driver approaches facility, app shows gate codes, hours, special instructions. Information appears when needed without searching.

The less work the app asks of drivers, the more they use it. Every removed tap, every eliminated manual entry, every automatic capture increases adoption.



SOLUTION

A redesigned Driver Utility App that delivers:

1. At-a-Glance Trip Guidance

Facility instructions

Gate codes, which entrance to use, where to park while waiting, check-in procedures.

Appointment details

Scheduled time, required documents, special requirements (TWIC card, hard hat, safety vest).

Turn-by-turn last-mile directions

GPS gets drivers to the address. Last-mile directions get them to the right dock. Critical difference in large facilities.

Expected dwell and wait times

Based on real data from other drivers. "Average wait time at this facility: 45 minutes." Helps drivers plan bathroom breaks, meals, next appointment.

Facility ratings from other drivers

Crowdsourced insights. "Restroom on site." "Parking very tight, back in carefully." "Front office closes at 4pm." Community knowledge.

SOLUTION

A redesigned Driver Utility App that delivers:

2. Automated Location Intelligence

Automatic arrival and departure

Geofencing detects entry and exit. Logs timestamps automatically. Drivers can verify but don't have to manually check in.

Smart movement detection

System recognizes when driver is moving versus parked. Doesn't ping constantly, preserves battery, reduces noise.

Transparent tracking indicators

Always visible status: "Tracking active for [Shipper Name]" or "Tracking off." No surprises about when location is shared.

SOLUTION

A redesigned Driver Utility App that delivers:

3. Simplified Documentation

Proof of delivery and bill of lading capture with auto-enhancement

Take photo, app automatically crops, adjusts brightness, enhances text. Produces clean, readable document images.

Receipt management

Lumper receipts, scale tickets, inspection reports all in one place. Accessible later if driver needs to reference or submit for reimbursement.

Hands-free workflows when possible

Voice commands for common actions. "Mark arrived." "Capture document." Keeps drivers focused on safe operation.

SOLUTION

A redesigned Driver Utility App that delivers:

4. Real Value for Drivers

Less waiting

Better preparation and facility intel speeds up check-ins and dock assignments.

Fewer repetitive calls

Dispatch and shippers can see status without calling. Driver's phone stays quiet.

Faster facility check-ins

Pre-populated information, digital documents ready, auto-arrival reduces gate interaction time.

Clear visibility into detention

Automatic timestamps prove wait time. Built-in detention calculator shows what driver is owed.

Accurate trip records

Complete history of every load. Useful for taxes, disputes, performance tracking.

A sense of control and transparency

Drivers see what's shared, control when it's shared, understand why it matters.

The app stops being a tracking tool and becomes a productivity tool. Drivers choose to use it because it makes their job easier, not because they're forced to.

OUTCOME

Increased driver adoption

Drivers finally saw clear value, leading to more consistent usage across carriers and fleets. Driver app daily active users increased 127% in six months post-launch.

Higher-quality tracking data

Auto-events and simplified workflows improved milestone accuracy and reduced manual errors. Location accuracy improved from 73% to 94%. ETA precision improved significantly.

Reduced support escalations

Drivers and dispatchers had fewer questions about status updates and facility behavior. Support tickets related to driver confusion dropped 38%.

Faster facility turnaround times

Better preparation and last-mile guidance aided smoother arrivals and departures. Average dwell time decreased 12 minutes per stop (significant at scale).

Stronger relationships with carriers

Drivers appreciated transparency and control, which improved sentiment and cooperation. Carrier retention improved. Feedback from drivers shifted from complaints to feature requests.

Business impact:

Better driver adoption meant better data quality, which meant more accurate ETAs, which reduced customer escalations, which increased customer satisfaction and retention.

The virtuous cycle we needed.

OUTCOME

Downloads of the app, and positive reviews of CarrierLink increased year of year, 3 years in a row as Driver's found value with the FourKites platform, the willingly contributed, Creating a virtuous feedback cycle of data integrity.

TOTAL LOADS: 156

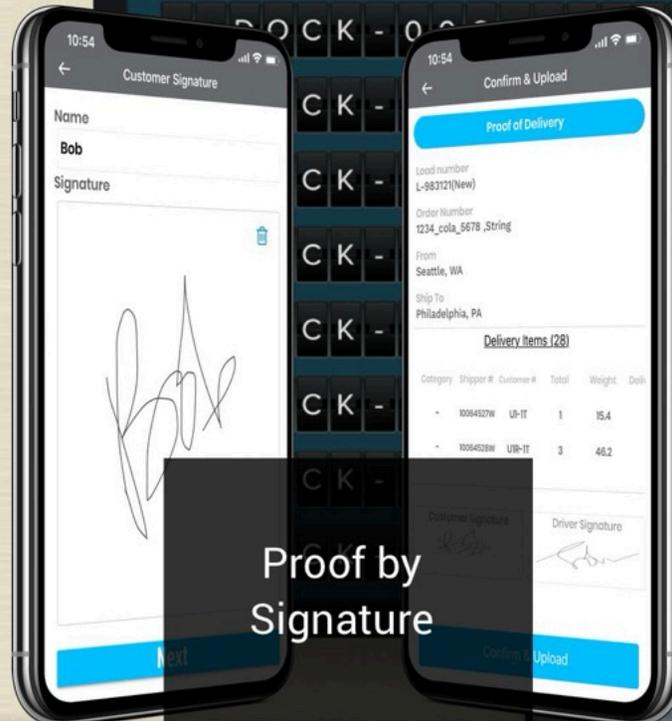
DOCK OCCUPA

	LOCATION	SCAC	EQUIP #	REF #
↓	DOCK - 001	JBHT	1772412	1717724
↓	DOCK - 002	JBHT	1772412	T - 47724
↑	DOCK - 003	JBHT	1772412	T - 47724
↓	DOCK - 004	JBHT	1772412	T - 47724
↑	DOCK - 005	JBHT	1772412	T - 47724
↓	DOCK - 006	JBHT	1772412	T - 47724
↑	DOCK - 007	JBHT	1772412	T - 47724

Companion Apps for better data

Ha Beeb
★★★★★ May 1, 2019
love it when brokers have us drivers use this! beats the hell out of having to call all the time or being bugged by the broker while you're sleeping! saves me time for sure!

Robin Helsel
★★★★★ April 12, 2019
I really like the app the way it is except somehow TQL lost the tracking along the way. Any suggestions?



Proof by Signature

Going off duty?
Changing the duty status will mean that all tasks assigned to you will move to open pool. Are you sure you want to end your shift?

Yes Skip

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REFLECTION

What Worked

Starting with driver needs, not shipper requirements

We stopped asking "how do we get drivers to give us what we need?" and started asking "what do drivers need that we could provide?" This reframe was critical.

Shadowing real workflows

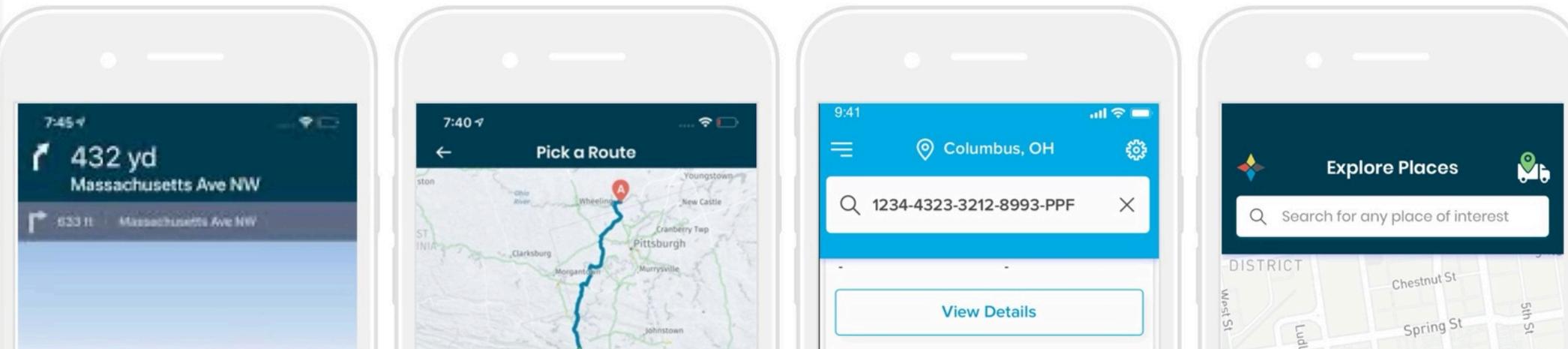
Interviews were useful. Watching drivers work in their actual environment was transformative. You can't design for truck stops if you've never been to one.

Transparency as a design principle

Showing drivers exactly what was shared and giving them control reduced resistance dramatically. Trust through openness.

Friction reduction obsession

Every removed tap increased adoption. We measured interactions per task and relentlessly simplified.



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REFLECTION

What I'd Do Differently

Include more diverse driver types earlier

Initial research skewed toward long-haul drivers. Local delivery drivers (Amazon, UPS-style routes) have different needs. Earlier inclusion would have surfaced these differences sooner.

Better offline support

Rural areas and facility dead zones have poor connectivity. App worked but struggled offline. Should have designed offline-first from the beginning.

More granular feedback loops

We measured adoption but should have instrumented specific feature usage more precisely to understand what was working and what was ignored.

Stronger dispatcher training

Dispatchers are the interface between drivers and shippers. Better training materials for dispatchers would have accelerated adoption and reduced confusion.

REFLECTION

What This Taught Me About User-Centered Design

The user isn't always your customer

Shippers pay for FourKites. Drivers use it. Designing for the user (driver) rather than the customer (shipper) required organizational courage but was essential for product success.

Utility beats features

Drivers didn't care about feature counts. They cared about whether the app made their day better or worse. One useful feature beats ten mediocre ones.

Trust is fragile in surveillance contexts

Any product that tracks people needs to earn trust through transparency and control. Hiding surveillance doesn't work. Owning it honestly does.

Incentive alignment matters more than interface design

Great UX couldn't overcome misaligned incentives. Once we aligned driver incentives (utility) with business needs (data quality), adoption followed naturally.

CAPABILITIES DEMONSTRATED

1. Field research:

Shadowing users in their actual work environment

2. Stakeholder complexity:

Balancing needs of users (drivers), customers (shippers), and business

3. Trust design:

Creating transparency and control in surveillance contexts

4. Mobile UX:

Designing for real-world constraints (poor connectivity, driving context, varied devices)

5. Incentive design:

Aligning user motivation with business objectives

6. Friction reduction:

Systematic simplification of high-frequency tasks

7. Privacy patterns:

Explicit communication and control of data sharing

