

ParkMobile Parking Zones

Andrew Alikakos, Pengfei Lu, Conor Monahan, Sindu Thoompally, and Jason Wehran



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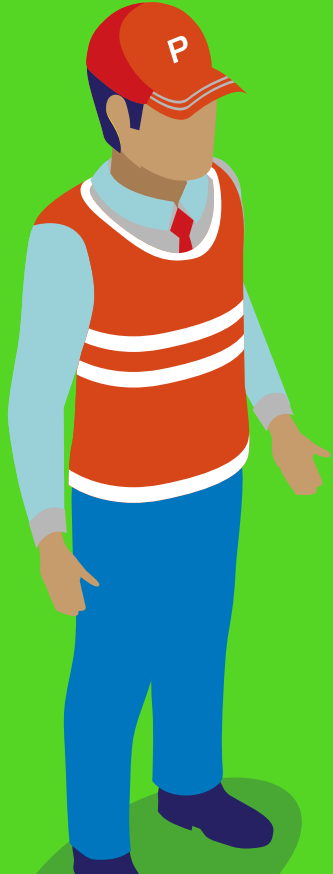
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Process and
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Our Mission & People

For decades, parking was a hassle. Then in 2008, ParkMobile launched with a simple goal: make parking easier. Today, our team is committed to creating tech-based solutions that power smart mobility and make parking hassles of the past obsolete.

**Striving for
Better Mobility,
Everywhere.**



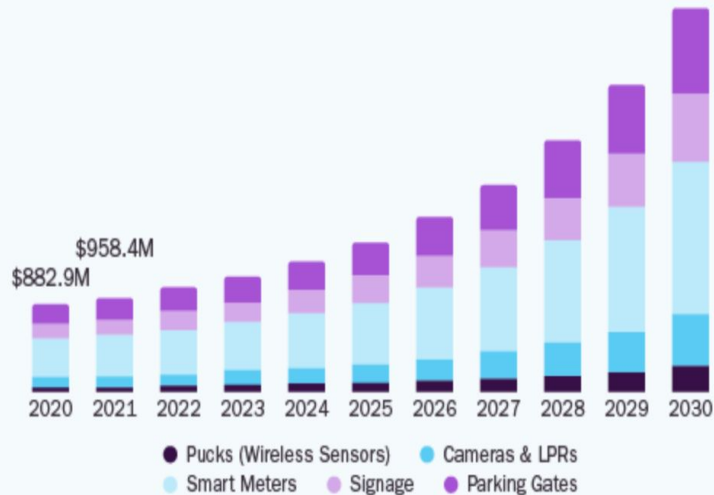
01

BUSINESS OVERVIEW

Industry Analysis

U.S. Smart Parking Systems Market

size, by hardware, 2020 - 2030 (USD Million)

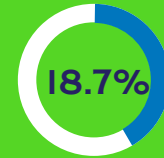


18.7%

U.S. Market CAGR,
2023 - 2030

Source:
www.grandviewresearch.com

**Estimated
CAGR**



**FROM
2023-2030**

U.S. Market: Smart Parking Systems:

\$958.4 Million

Market Analysis



LOCATIONS

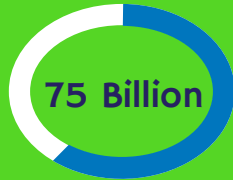


Largest Cities in America (By Population)

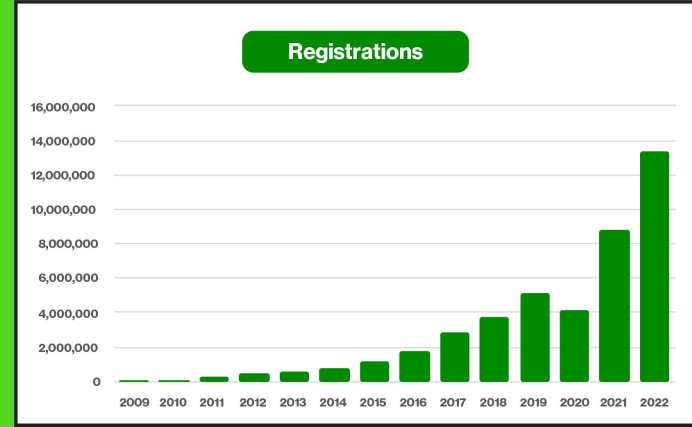
400 cities total

Business Model

**Total Minutes
(2008-Present)**



465 Billion Transactions



Revenue: \$30 million



PROBLEMS AND OPPORTUNITIES



PROBLEMS

1. Users entering the wrong spot number
2. Users having to get out of their car and look for the specific spot number
3. Parking Duration too Short



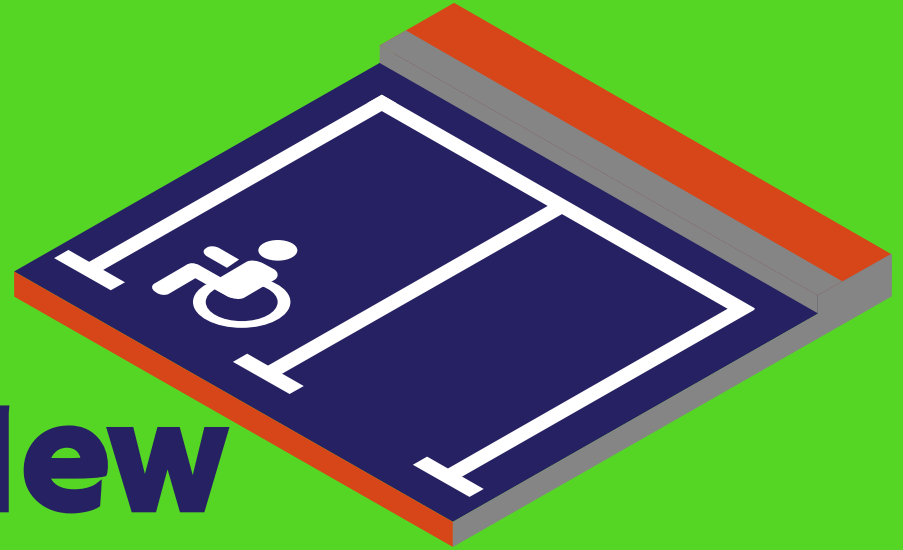
Opportunities

1. Create general zones instead of specific spots
2. Use GPS to automatically pull up zone
3. Increase parking duration



02

Proposed New Process





Current System



Current Registration System

STEP 1

Look for spaces



STEP 2

Look up zone ID



STEP 3

Set up parking time

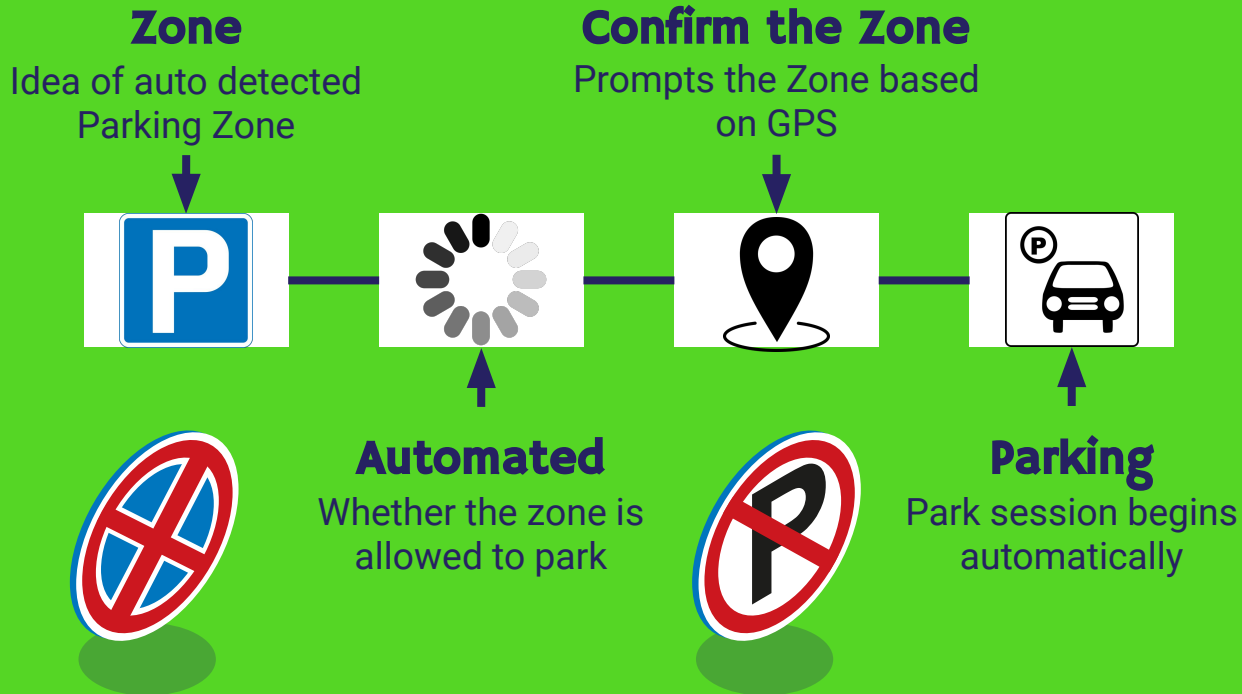


STEP 4

Check the time



New Registration System



Implementation

Back-End	Front-End	GPS Tech
Updating to support the establishment and administration	To allow users to register zones	Work to establish and end the parking session
Accessible by Authorized	Interact with Users	Confirm the Session



Benefits

Simplified Registration Process

Prompts the “Zone”
Save time and effort
Improve the accuracy



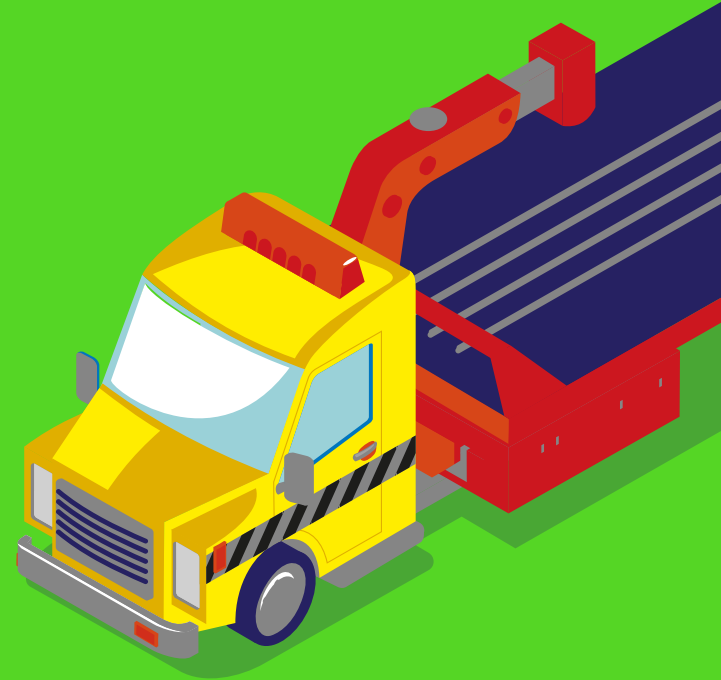
Enhanced User Experience

User-friendly Interface
Less action needed



Better Data Management

Update the back-end to support
Data Analysis
Service Delivery

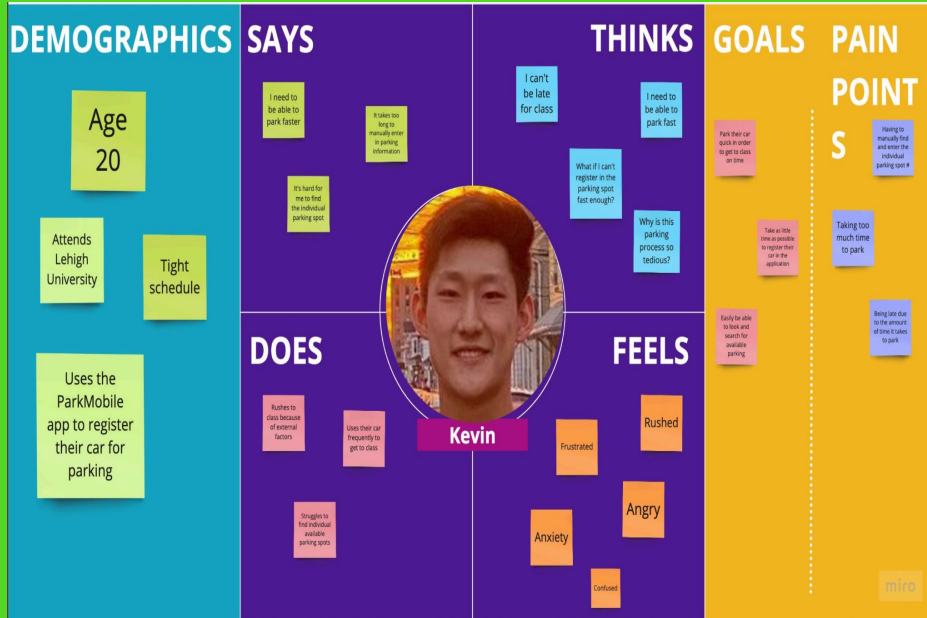


03

Design Solution



Persona Empathy Maps



"The zones would make the parking process a lot easier..."

- Kevin & Professor Smith

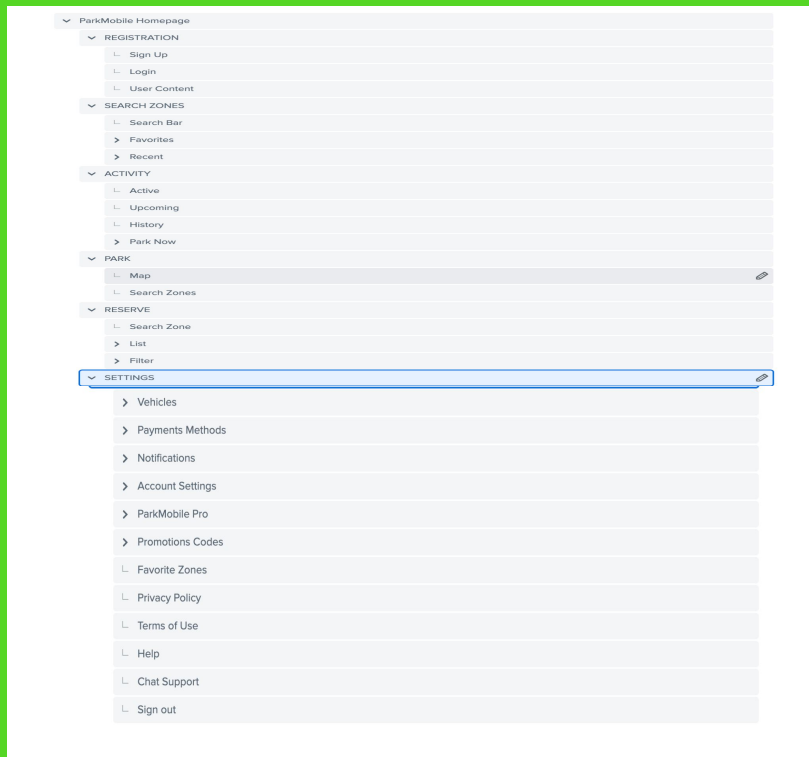
Our Hybrid Card Sort

1. 1.Registration: Easier physical action of user registration
2. 2.Parking spot identification changes: Eliminating user error in selecting wrong parking spot ID
3. 3.License plate input changes: License plate input feature
4. 4. Reservation system: Developing a reservation section
5. 5. Software changes: Front-end changes and Back-end changes In-house development by ParkMobile software developers
6. 6. User experience improvements: Simplifying parking spot selection process
7. 7. Privacy and security considerations: Obtaining user consent for private information access
8. 8. Market size and revenue: Parking industry revenue
9. 9.Industry consistency: Potential technological breakthrough
10. 10. Implementation considerations: Potential impact on existing features and functionality.
11. 11. Time and resources required for implementation
12. 12. Potential impact on existing features and functionality.
13. 13. Parking lot maps for students
14. 14. Student parking options for overnight stay
15. 15. ParkMobile app accessibility for students with disabilities
16. 16. ParkMobile customer support for student inquiries
17. 17. ParkMobile FAQs for Lehigh University students
18. 18. ParkMobile app integration with Lehigh University weather alerts
19. 19. ParkMobile app integration with Lehigh University emergency services
20. 20. ParkMobile app integration with Lehigh University academic calendar
21. 21. ParkMobile notifications for parking availability
22. 22. Student parking options for University holidays
23. 23. Payment methods: Credit card
24. 24. Payment methods: Debit card
25. 25. Payment methods: Mobile wallet

Results:

- 5 participants
- Able to group in a consistent manner
- Consistency helped us picture our tree test
- Outliers were resolved

Tree Test



Results:

Tasks

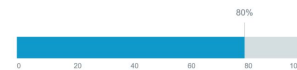
Success



This chart shows the average success score across all your tasks.

Out of all the tasks completed by participants, 100% ended up at a "correct" destination.

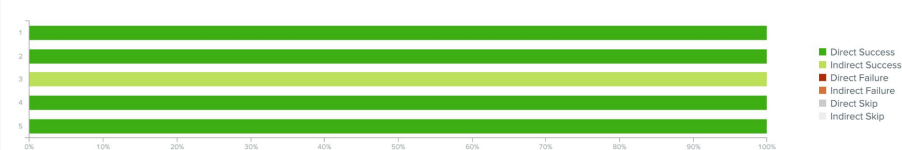
Directness



This chart shows the average directness score across all your tasks.

Out of all the tasks completed by participants, 80% of destinations were chosen without backtracking.

By task



Site Map

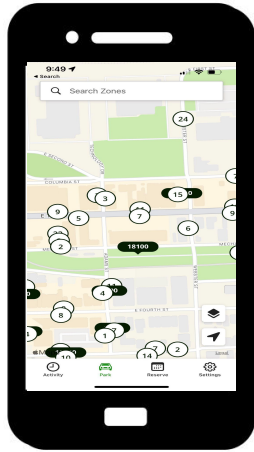




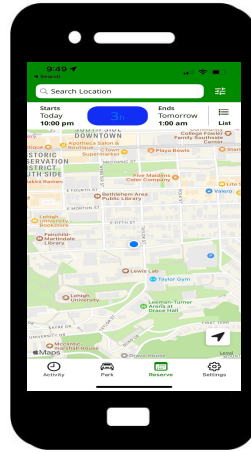
UI Prototypes



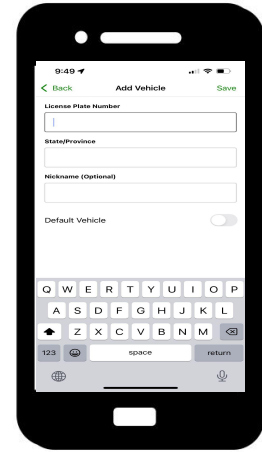
Main Menu



Reservation Menu



Add Plate



04



Acquisition Strategy and System Changes

Acquisition Strategy

- **In-house development**
 - **More control over development process**
 - **Cheaper**
- **No external vendors or contractors, do not require any specific contract request type.**

Changes to the System

- Specific requirements of the system, the current processes and infrastructure in place at ParkMobile.
- Geo-software is already implemented.
- Need to add:
 - map to manually pinpoint a parking spot and access to relevant data or systems
 - provide input and feedback throughout the development process

◀ Did we meet the requirements? ▶

- Benefits users, ParkMobile and community
- Improves overall parking experiences and lowers tickets
- Transitioning from individual parking space numbers to entire parking zones.



◀ Did we meet the requirements? ▶

- Users will no longer have to search for the specific parking space number in order to park.
- Improving the parking process and customer satisfaction will create an opportunity for ParkMobile to attract more customers.



05



Implementation Process and Analysis

⬅ Risks and Feasibility Concerns ➡

Constant Pinpoint Geographic Location Tracking

- Breach of privacy?
- Supplemental

Updating Parking Zone Information

- Incorrect information displayed
- New UI, but not difficult

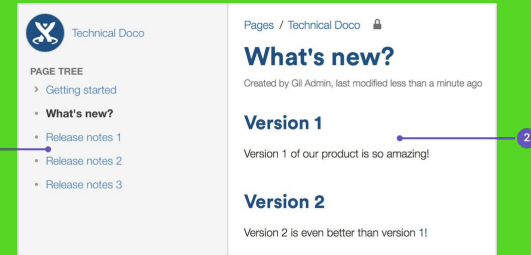
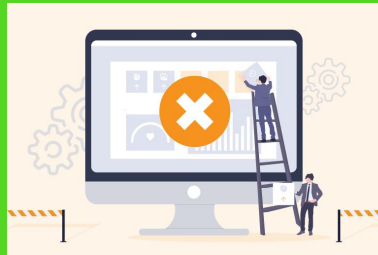
License Plate Photo Feature

- No risk
- New UI, but reusable technology



How will we Implement?

1. **Notify users in advance**
 - a. **Additional reminder immediately before**
2. **Take system offline (downtime)**
 - a. **Implement improvements**
3. **Present “What’s New?” page**
 - a. **Kept in settings for future reference**



Solving the Problem

- **PROBLEM: Excessive and prolonged parking experience**
 - 30 seconds to 2 minutes of wasted time
- **New system recognizes parking zone and prompts user with ability to park immediately**
 - Wasted time removed entirely
 - Users only choose duration
- **Advanced GPS removes human error**
- **Customer satisfaction → Business growth**



errors



Cost / Benefit Analysis

Assuming:

- \$200,000 in Labor
- \$50,000 in Materials
- \$25,000 in Overhead
- 8% Discount Rate



NPV IN THREE YEARS:

$$\text{NPV} = (-\$275,000) + (\$300,000 / (1 + 0.08^1)) + (\$50,000 / (1 + 0.08)^1) + (\$300,000 / (1 + 0.08^2)) + (\$50,000 / (1 + 0.08^2)) + (\$300,000 / (1 + 0.08)^3) + (\$50,000 / (1 + 0.08)^3)$$

$$\text{NPV} = \$87,384.06$$



THANK YOU

DO YOU HAVE ANY QUESTIONS?

