

### PARKLINK

THE ONE-STOP APP FOR ALL YOUR PARKING NEEDS

# UCLA aws

In Collaboration With



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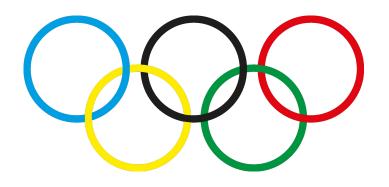
#### Leena Musharbash



#### **Raf Fernandes**



### The Olympic Experience





### ...But LA Traffic





### **Problems to Tackle**

- 1. Parking Availability
- 2. Frustrating Traffic Congestion
- 3. Navigating in a Big Confusing City

### **Issues With Existing Apps**

- 1. Lackluster Customer Service
- 2. Parking Reservation Issues
- 3. No Real-Time Parking Availability Info





## PARKLINK

THE ONE-STOP APP FOR ALL YOUR PARKING NEEDS

### **Meet Jason Smith**



Age: 45 Occupation: Marketing Manager Location: Los Angeles

**Personality:** Friendly, outgoing, great sense of humor organized

#### Background:

- Comfortable with **basic mobile apps**
- Values convenience & efficiency
- Huge sports fan
- Finding a decent parking spot gives him **anxiety**

#### Goals:

- Enjoy LA28 without worrying about parking
- **Reserve a spot** in SoFi Stadium in advance
- Shuttle services take him directly to the SoFi Stadium

Challenges: Cost & availability of parking, security

### **Our Benefits**

Accessible Parking Spaces

2

Fast Shuttle Services

Affordable Reservations



Convenient Notifications

### **About Parking Capacity**

#### **Premier Partner**

- Reservations
- QR code/sensor for each spot
- Internal lot map
- API for ticketing

#### **Reliable Partner**

- Parking sensor by entrance & exit
- Total number of available spots

#### **AWS Integration**

- Reliable, Scalable, Secure
- <u>AWS Amplify</u> app hosting
- <u>loT</u> connect & real-time data from loT devices
- <u>SageMaker</u> build & deploy predictive ML models
- <u>Amazon API Gateway</u> build
  & publish RESTful APIs

#### **Registered Space**

- Predict availability using heatmaps
- Individual owners report through app when lot is full

#### Unregistered

- Predict availability using heat maps
- Calculate total space based on sq ft & no. of floors

### **Business Model & Market Size**

#### \$18.6MM

Parking Spots in LA 200 mile radius

### \$45.00/day

Average Event Parking Price in LA

60%

Occupancy Rate in LA Parking Lots

### \$1.55+ per space

10% commission per parking space sold on ParkLink

### \$21,000,000

Estimated Revenue Projection for 5 years

#### 27,000

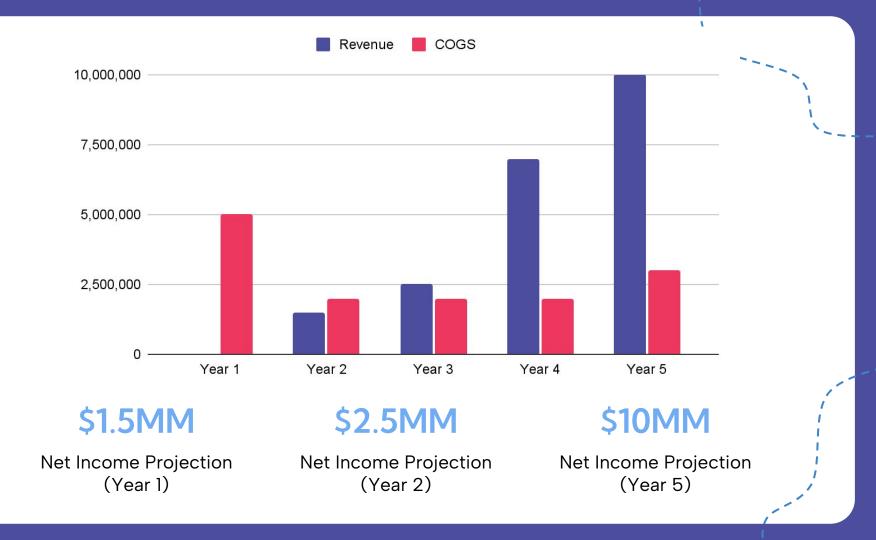
Max SoFi Stadium Parking Capacity

#### 100,000

Total spectators at a single Olympics venue

### \$10B

Total Annual Parking Lot Industry US Revenue





# Market Validation & References

**2,276,974** Registered Vehicles in Los Angeles

**\$1,785 Used** Per Person, Per Year, Looking for Parking

Dr. Barry Sanders **UCLA** 

Nick Osterbur AWS

Lawrence Tran Bruins4BetterTransit





Seamus Dolan **Slalom**  Jack Symington LACI /

Dealing with LA traffic & parking is an ongoing issue, but we believe an innovative app can help solve this problem

- In reference to our meeting with Dr. Sanders Director of LA2028, the group that successfully bid to bring the Olympics to LA in 2028

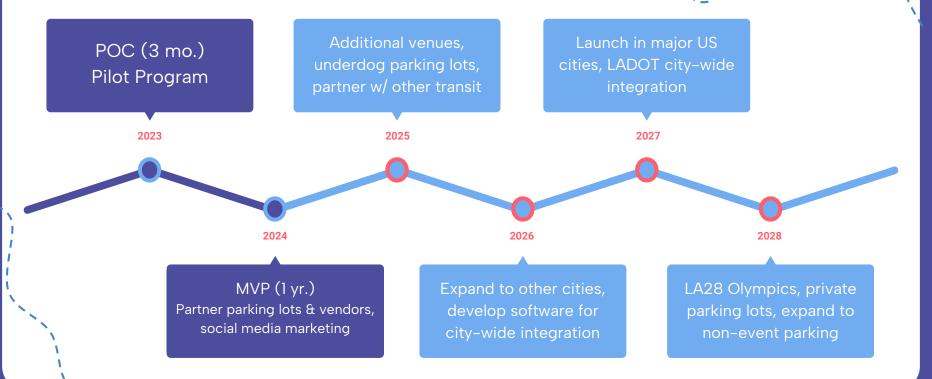
> "[ParkLink] is **innovative** by activating, knowing, & tracking if where you're heading becomes full." - Nick Osterbur

### ParkLink Demo





### **Future Projections**





Special Acknowledgements Slalom Build Raffi Simonian

**CREDITS**: This presentation template was created by **Slidesgo**, & includes icons by **Flaticon**, & infographics & images by **Freepik** 



Market Research Sources

**Future Features** 

**Benefits for Parking Lots** 

**Benefits for Shuttle Services** 

**VIP** Experience

Heat Maps

**Competitive Advantage** 

**Expansion Plan** 

Security & Privacy

#### **Market Research Sources**

INRIX 2022 Global Traffic Scorecard

The 10 Most Congested Cities in the US

<u>AWS loT</u>

AWS Lambda

AWS SageMaker

Amazon API Gateway

AWS Database Services

<u>SoFi Stadium</u>

<u>Forecast: Industry revenue of "parking lots &</u> <u>garages" in the U.S. 2012-2024 | Statista</u>

How AI Solutions Make Parking Lots Smarter

<u>– & More Secure</u>

Parking Management Market

<u>US Parking Rates</u>

#### What are Some Planned Features?

- Implement two-factor authentication for security
- Collaborate with security & logistics teams for VIP users
  - Provide refreshments, Wi-Fi, & secure parking for shuttles
- Verify parking lot businesses
- Tailor push notifications for personalized experience
- Expand shuttle services to include other transit systems
- Integrate event information, schedules, & concessions
  - Offer interactive heat maps & navigation tools
- Provide on-site medical emergency services & multilingual support
- Potential partnerships with ride-sharing services & autonomous vehicles

#### What are Some Planned Features?

- Infrastructure upgrades to **accommodate autonomous vehicles** 
  - Charging stations for electric vehicles, advanced sensors or communication systems
- Adaptation to new parking patterns: optimize **space utilization** 
  - Considering autonomous vehicle size, maneuverability, charging requirements
- Advanced surveillance systems, integrating with autonomous vehicle security protocols

#### Why Would Parking Lots Cooperate?

- Increased Revenue: Optimize efficient parking management strategies
  - Dynamic pricing, reservation systems, & digital payments
  - Higher occupancy rates, increased customer satisfaction
- Streamlined Operations: Advanced technology solutions
  - License plate recognition, automated ticketing, & real-time capacity monitoring
  - Reduce labor costs, minimize towing & violation ticketing
- Enhanced Customer Experience: Contactless payments & personalized recommendations
  ⇒ higher customer retention & loyalty

#### Why Would Shuttle Services Cooperate?

- Increased visibility & exposure to a larger customer base
  - Access to event attendees, tourists, & commuters
  - Maximize the occupancy rate of the shuttles & boosts overall revenue
- Seamless integration to access shuttle information, check schedules, reserve seats, & track shuttle locations in real-time
- Valuable **data analytics** on shuttle ridership, usage patterns, & customer preference
- Network potentially lead to additional partnerships within transportation industry

#### How does the VIP Experience Differ?

- Exclusive **designated parking areas**: prime locations & valet parking
- Enhanced security measures
  - 24/7 surveillance, security patrols, & emergency response plans
- Premium amenities & services
  - VIP shuttles, complimentary refreshments, dedicated customer service, & Wi-Fi
- How the VIP tier generates additional revenue
  - Partnership opportunities with LA28 organizers & sponsors to offer bundles
  - Cross-selling opportunities with other premium services
  - Data analytics & insights to track & optimize performance, improve customer satisfaction & retention

#### How Would the Heat Maps Operate?

- Heat map: graphical representation that uses color coding to indicate spot availability
- Parking management system use sensors or cameras installed in parking lots or on-street parking spots to detect the space occupancy real-time
  - Data transmitted to a central server, analyzed to create a heat map
  - Green indicating available spaces, yellow indicating limited availability or reservation, &
    red indicating occupied
- Integrated with navigation tools for directions to the nearest available parking spot
- Optimize parking operations, adjust pricing based on demand
  - Identify trends & patterns to improve efficiency & revenue

#### What is ParkLink's Competitive Advantage?

- **AWS technologies** for innovative parking solutions & seamless integration with existing systems
- Machine learning & artificial intelligence to maximize efficiency
- **Real-time updates** for accurate location tracking & improved customer service
  - Proactive, not reactive
- Enhancing ease of use for customers through intuitive interfaces & **user-friendly** features
- Offering parking lot partners more **advantageous revenue-sharing percentages**

#### How is ParkLink Planning to Expand?

- Research local regulations & permit requirements of the target city
- Engage with local authorities & seek guidance to ensure compliance
- Allocate resources for the application process & necessary approvals
- Hire local staff or collaborate with local partners to bridge cultural & language gaps
- Customize marketing & communication strategies to resonate with the local audience
- Implement effective marketing strategies to build a strong brand presence
- Adjust pricing strategies to remain competitive
  - Considering local market conditions, cost structures, & customer affordability

#### How Does the Payment System Work?

- Multiple Payment Methods:
  - **Online Payment: s**elect their parking duration, payment details, confirmation
  - Credit & debit cards: online & at existing payment kiosks
  - Mobile payment & contactless payments: NFC-enabled cards or mobile wallets
  - No double payment, customer service integration for real-time refund requests
- Automatic Payments: seamless recurring transactions for frequent parkers or long-term parking arrangements
- Integrates with **parking access systems**, such as ticket dispensers & barrier gates
  - Pay at the exit by scanning their online ticket or entering their license plate number
- Encryption & follows industry-standard security protocols to safeguard sensitive data

#### How Would ParkLink Ensure Security & Privacy?

- **Protect customer data** during transmission & storage, ensuring that sensitive information is unreadable to unauthorized parties
- Industry standards & employ advanced security measures to safeguard customer payment information
  - GDPR (General Data Protection Regulation), CCPA (California Consumer Privacy Act)
- Access Controls: only available to authorized personnel with a legitimate need
  - Access rights are regularly reviewed & updated
- Testing systems, networks, & applications for potential security weaknesses & applying necessary security patches & updates
- Firewalls, intrusion detection systems, & monitoring tools to detect & prevent unauthorized access or attacks