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Smart Cities and New Urban Mobility
Parking – a Driver for Change?
SIS 23
Parking 50 years ago...
How we search for parking....
30% Average percentage of cars in congested downtown traffic cruising for parking*

Donald Shoup, 2005

LOST $ $121 billion in time and fuel;

WASTED TIME 38 to 67 hours lost in traffic; 5-8 days
Vulnerable road users are paying the price...

What are VRUs?
Roadway users that aren't protected by a car top or vehicle doors.

Pedestrians
Over-represented by crash data
11% of trips

but
14% of accidents
A pedestrian is injured every 8 mins.

Fatalities are up (2005 to 2010)
30% in bicyclist fatalities
46% in pedestrian fatalities
Why Parking is such a Pain?

**Confusing Signs**
- Can I park here?
- When can I park here?
- And for how long?
- Do I need to pay?
- Will I get towed?

**No Turnover**
- When hourly metered parking rates fail to manage demand, parking supply shrinks. Properly setting rates will increase available parking.

**Broken Meters**
- Broken meters confuse drivers. Few know whether it's legal to park at an inoperable meter. Further, broken meters lead to erroneous parking citations.

**Coin Only Meters**
- Meters that don't take credit cards are inconvenient. They also exacerbate traffic by forcing drivers to search for other parking payment options.

**Time Limits**
- The maximum time customers can purchase is often arbitrary. It shouldn't be. When the time limits are wrong, drivers can't purchase the time they need. So they continue driving.

**Inefficient**
- During peak periods, drivers park less efficiently on blocks where spaces are unmarked. This leads to fewer open spaces when they're needed most.

**Illegal Parkers**
- When parking enforcement is insufficient or fines are too cheap, people skip paying the meter. Scoundrels take up valuable space that paying customers need.

**Finding My Space**
- Often motorists don't know that a free parking spot is just a block away. Consequently, they circle in vain looking for a space, making traffic much worse.

**Exempt Parkers**
- Offering free parking to hybrid vehicles or motorists with disabilities reduces available parking for paying customers. It also leads to the abuse of disabled placards.
Managing demand with rates

What it is:
• Increased efficiency instead of extension of supply
• Pricing to change behavior, so Demand = Supply

What it is not:
• Another form of taxing the public
• A finger in the air approach, instead it requires an algorithm-driven pricing engine
• Stock market like price changes

LA Express Park™ Case Study
• Dynamic pricing across 6,300 spaces in pilot area
• Ensure 10 to 30% of spaces are available
• Reduced rates at 60% of spaces (increased in 27%)
• 10% reduction in parking congestion

Results

- Reduced rates at 60% of parking spaces
- Increased rates at 27% of parking spaces
- Demand pricing decreased
- Parking congestion decreased 10%
- Ensure 10-30% space availability
- Increase in total revenue 2%
### Unmarked spaces study and access

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Occupancy</th>
<th>Lost Spaces</th>
<th>Near Full Occupancy</th>
<th>Full Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 vehicles</td>
<td>5.19%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 vehicles</td>
<td>9.09%</td>
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<td></td>
</tr>
<tr>
<td>8 vehicles</td>
<td>81.82%</td>
<td></td>
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</tr>
<tr>
<td>9 vehicles</td>
<td>3.90%</td>
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</tbody>
</table>

On average, we can park **2.84 more vehicles**, a loss of **1.16 vehicles**

*14% of the time when 5 vehicles are parked there’s a loss of 2 to 3 vehicles*

*When 6 or more vehicles are parked we can never reach full occupancy*
There are many different players
We need to change the way we think about Parking

In what parking spot number the car is parked?
What is Parking?

Parking is a process.

The process begins before the driver ever puts the key in the ignition.
Parking is an integral part of Urban Mobility
Parking is integral part of Urban Mobility.

Encourage behaviour change by data-driven decision-making.

Allow drivers to make knowledgeable decisions ahead of time.

Transparent marketplace platforms to ensure fair competition while enabling users to compare all mobility options.
Parking in the driverless future...

What will be the impact on

- car ownership?
- driving habits?
- parking?
- parking spaces?
- traffic?
Thank you and see you next year....