Sensors, Networks and Apps: How Technology is Redefining the Way We Park
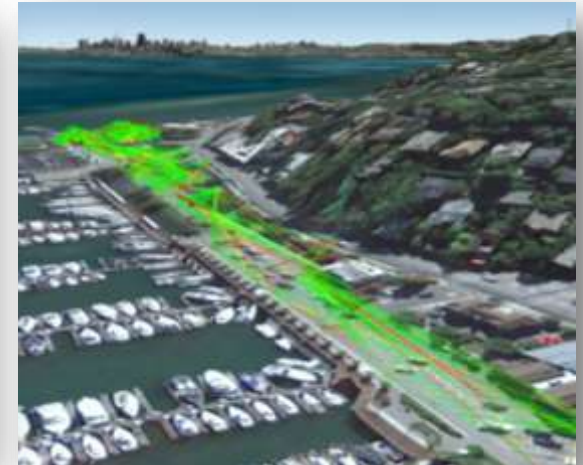

www.streetlinenetworks.com

PARKING: THE GREAT UNSOLVED URBAN PROBLEM

For Cities
- Parking revenue loss
- Severe congestion- 30% of traffic
- (45% in Brooklyn – Fortune Magazine)
- Inefficient resource allocation
- Major environmental impact

For Consumers
- Significant waste of time
- Economic cost
- Ineffective pricing
- Major source of frustration

For Merchants
- Loss of business due to lack of parking
- Customer frustration
- Limited ability to influence – no data

PARKING CHALLENGE CAUSES 30% OF TRAFFIC IN CITY

The New York Times

15 blocks for 1 year in Los Angeles

3.3 min – average time looking for parking

950,000 miles – excess vehicle miles driven
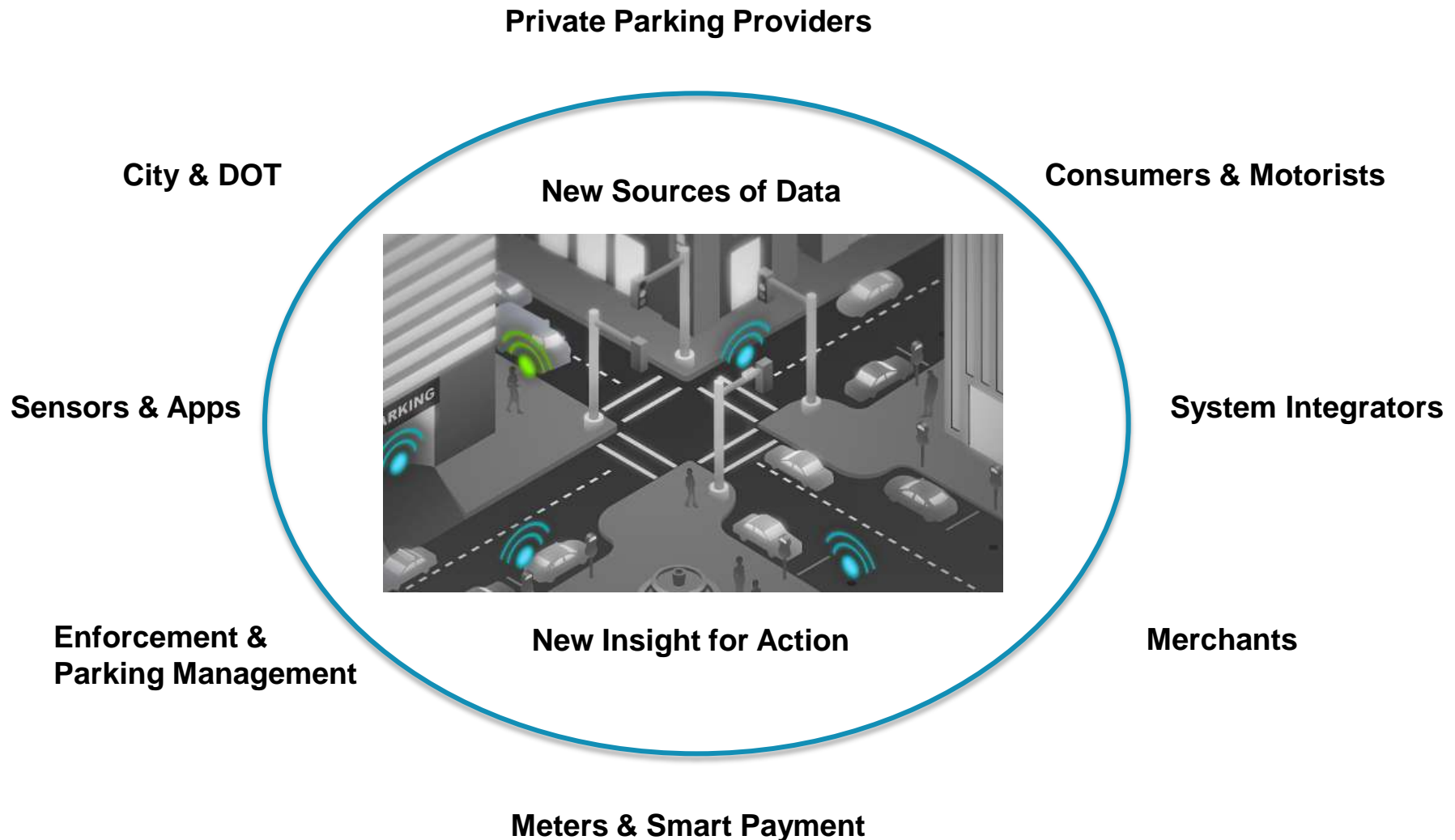
38 trips – around the earth

47,000 gallons – wasted gas

730 tons – carbon dioxide greenhouse gas

All this driving to get nowhere

*Based on 2007 UCLA Study by Prof. D. Shoup

"SMART PARKING ECOSYSTEM" DATA TO ACTION

Private Parking Providers

City & DOT

New Sources of Data

Consumers & Motorists

Sensors & Apps

System Integrators

Enforcement & Parking Management

New Insight for Action

Merchants

Meters & Smart Payment

THE FUTURE IS HERE: GUIDED PARKING

Consumer is quickly guided to the most convenient and cheapest parking spot and can easily make a parking transaction

WIRED

We tried out the (Parker) app **and wish it were already available in every city** we've ever driven. (Dec. 2010)

FASTC@MPANY

" **Real-time parking search is something of a holy grail** for drivers in big cities--and now it's available… by Streetline" (Dec. 2010)

Experience of Consumers in Los Angeles, CA
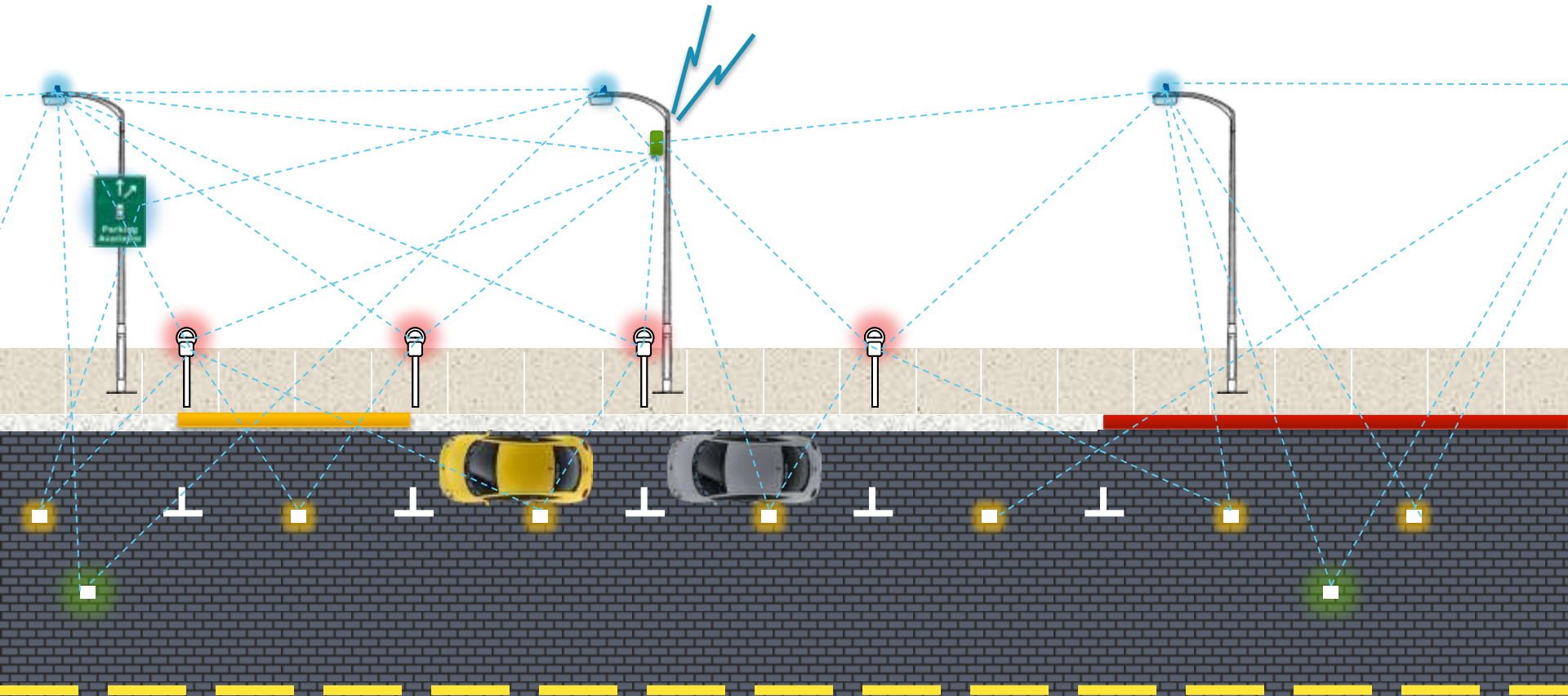
Experience of Consumers in Fort Worth, TX
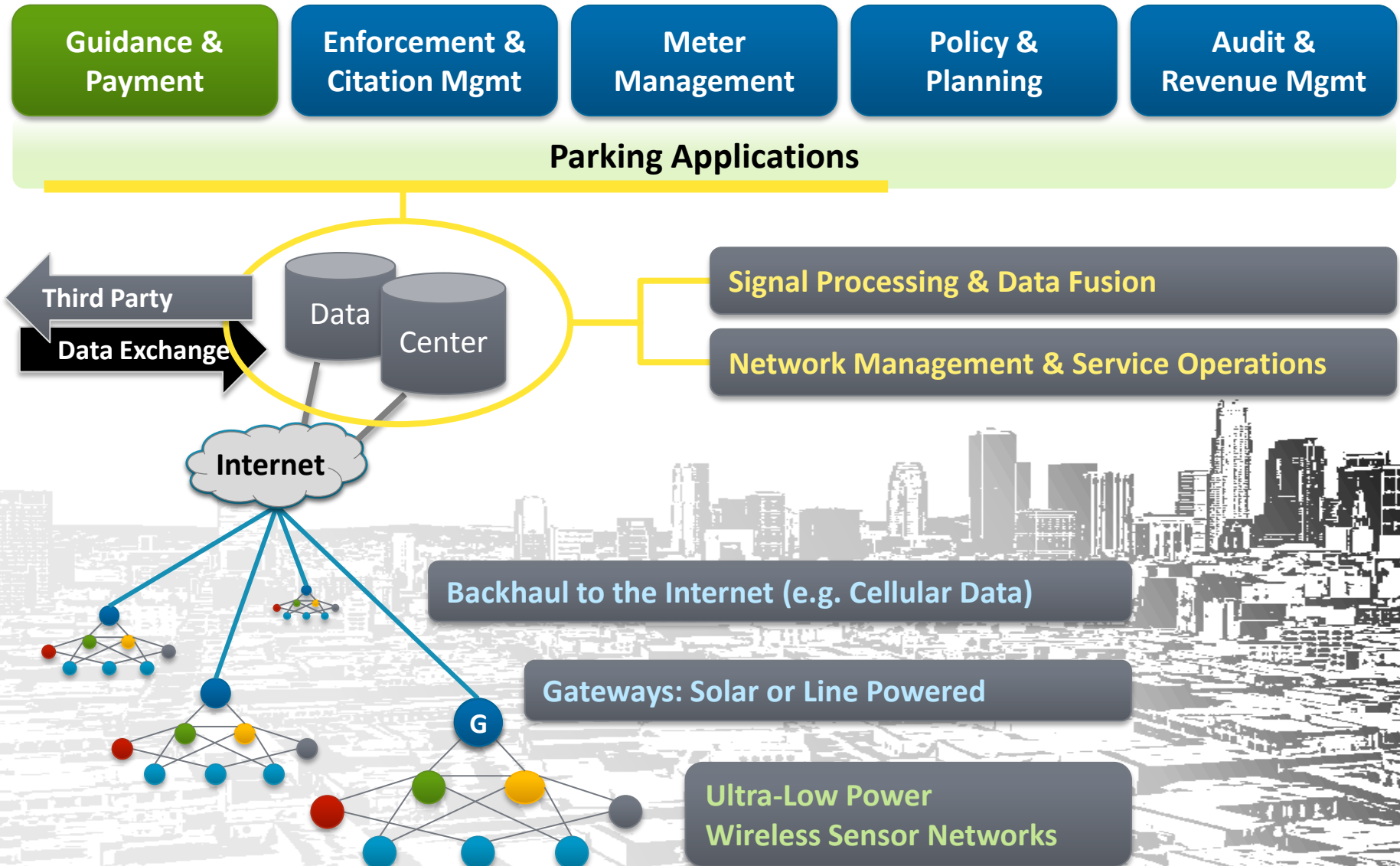
IT ALL STARTS WITH THE SENSORS….

LOW POWER MESH NETWORK

- Ultra-low power sensors
- Mesh canopy of repeaters and gateway
- Gateways backhauled via redundant cellular

SMART PARKING TO ACTION

Guidance & Payment	Enforcement & Citation Mgmt	Meter Management	Policy & Planning	Audit & Revenue Mgmt

Parking Applications

Third Party

Data Exchange

Data Center

Signal Processing & Data Fusion

Network Management & Service Operations

Internet

Backhaul to the Internet (e.g. Cellular Data)

Gateways: Solar or Line Powered

G

Ultra-Low Power Wireless Sensor Networks

SMART PARKING IN ACTION ……

NYC (Roosevelt Island)	WMATA	Los Angeles
Enforcement & Guidance	Deployed at station parking lots	On street & garages
Digital meter integration	Enforcement & Guidance	Enforcement & Guidance
Embedded for snow conditions	Mobile payments	Expanding across city
	POM Meters	IPS & Duncan Integration

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