An Introduction to ITS America Research's 2012 Report

Smart Parking and the Connected Consumer

Opportunities for Facility Operators and Municipalities

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The Intelligent Transportation Society of America

- **Who is ITS America?**

    - Trade association representing almost 500 public and private sector organizations involved in all aspects of ITS research, planning, development, and deployment

    - System and Service providers in Automotive, Wireless, Information Technology , Consumer Electronics, Road and Parking Operators, Freight, Transit and Passenger Carriers.

    - Headquartered in Washington, DC with 24 regional and state chapters representing 36 states. Includes public sector operating agencies, regulators, R&D, safety advocacy

- **Our Vision**: Help save lives, time and money and help sustain the environment through broad deployment of interoperable Intelligent Transportation System (ITS) technologies

- **Our Mission**: Be proactive leaders for all ITS stakeholders promoting collaboration and networking in research, development and design of ITS technologies to accelerate deployment

Driver | Vehicle | Infrastructure/ Environment
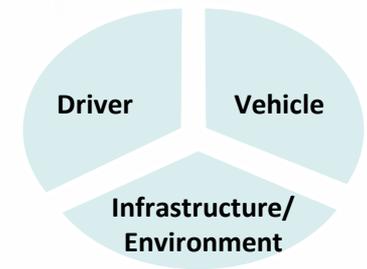
Basic Questions Addressed in Report

- What is Smart Parking? How does it work? what are the Constraints?

- How big is the Parking Industry? What part of it is Smart Parking?

- What are the potential advantages for Operators to Employ Smart Parking?

- What kinds of facilities can it support, and how do service requirements differ between facilities?

- What are the challenges to Smart Parking deployment?

- What does the future hold?

The Parking Universe is Big

- Parking is a $24-25 billion industry, highly fragmented but experiencing consolidation and outsourcing of operations

- Low growth in construction starts and new facilities

- Number of existing facilities may be well over 10,000. Number of spots is uncertain – Far above 300 million.

- Most parking is free (ie subsidized) – Minimum of 10% of all parking is for-charge. Just over 50% use cashless payment

- Very wide variety of Facility Owners and Operators

- Low Growth in Services– Little focus on customer experience

Smart Parking Technology Universe

- Infrastructure: On-street metered, Off-Street Facility

    - The four broad model categories: airports & hospitals, municipalities, universities & retail, and commercial parking garages.

    - Greenfield and Brownfield Facilities with existing hardware

- Vehicle: Light Vehicles and Commercial Fleets

    - Personal Car, Rental/Share, Taxi, Shuttle/Transit, Delivery, Electrics

    - Multiple Screens (Brought in Consumer Device, Car..)

- Drivers: Personal Trips, Commercial Deliveries, Livery

    - Discretionary Trips (Shopping)

    - Non-Discretionary Trips (Residential, Business, Commuting)

Driver   **Vehicle**

Infrastructure/ Environment
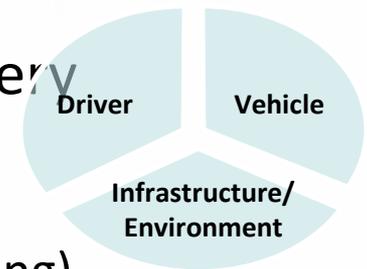
What is Smart Parking?

- For Consumers

  - Gets them door-to-door to their ultimate destination without searching and uncertainty related to cost, travel time, payment, etc.

  - …In-sync with trip-generating activities (appointments, commuting) – with option for ancillary services (e.g. Valet, Vehicle Maintenance)

- For Parking Operators

  - For this convenience, a marginal markup over existing parking fees

  - Reduced operations costs (lower cost enforcement/maintenance losses from unaccounted for transactions – ie "leakage")

  - Enhance long term value of infrastructure, and new ancillary revenue opportunities

The Key Element of Smart Parking

- Matches underutilized parking assets to consumers' unmet mobility needs.

  – May measure or predict availability to spots

  – Simply parking payments, cross-promote other services

- Establishes Links to Customers, Operators, and Partners

  – Consumer - Web, Mobile Apps, Nav Devices, Vehicle Telematics

  – Operators - Integrate Point-of-Sale terminals (Meter/Pay Station), Gates, Occupancy Sensors etc..

  – Partners - Application Program Interfaces to bundle parking at merchants websites

Key Smart Parking Applications

- Electronic Payment (Parking Access and Revenue Control Systems and Permit and Enforcement - **PARCS** /P&E)

- Parking Usage Recognition and Customer Service (**PURCS**) Mobile Phone Parking/Spot Reservation

- Other Applications by Adoption

  - Early - Parking Model specific services (Validation, Shuttle schedule)

  - Mid - Vehicle Oriented and Other Services: Valet, Concierge, Vehicle Maintenance, Electric Vehicle Charging

  - Mid to Late – Bundled Merchant Related Services: Reservations and Entertainment passes, promotions, advertising

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Ideal Smart Parking Deployment

- The ideal would be a parking application hosted solution that is completely Infrastructure-free, low cost and scalable

- Can scale operations to millions of parking spaces, with minimum incremental costs per facility/stall

  - Leveraging customers' mobile devices to purchase permits or meters

- Challenge still must have some infrastructure (Gates, parking meters, pay-by-foot stations) to accommodate late adaptors

- Technology to accommodate every type of facility has been one of the greatest challenges facing the industry

Specific Parking Service Models

- Airports and Hospitals – High Service

  – high value placed on on-time arrivals, high average revenue per stall

- Municipalities –Medium Service

  – Lowest average revenue per stall (15x less), high occupancy/turnover, best room to grow revenue, lower costs, and improve service

- Large Institutions/Retail/Tourism - Mixed-to-Low Service

  – Largest facilities to support transient, best to bundle with merchants

- Commercial – Mixed-to-Low Service

  – Fragmented operators, supporting mix of commuters and transients – competes with on-street in Central Business Districts

Challenges for Operator Investment

- No means to invest - stressed public budgets in case of municipalities, short term operations contracts in case of commercial operators

- Low potential upside on revenue desire to keep parking charges low

  - To encourage or subsidize some other activity (e.g. retail shopping, university attendance)

  - Fear of public backlash from rising parking fees

- Short Payback periods - may lack apriori understanding degree of potential revenue leakage or upside potential to increase occupancy

Key Study elements

- Revenue opportunities for public and private sector operators, with market size per service segment.

- Market approach for Smart Parking Solution Providers and customer buying criteria by service segment approach.

    – Basic Differences between Greenfield vs. Brownfield Operators

    – Go upmarket (fewer larger facilities/operators) and downmarket (scale to more smaller entities)

- Look at issues reducing or constraining scale of solution, beyond facility integration costs

    – Continuity of Operations Support and System/Payment Security.

The Future

- May be surprising how much more consumers are willing spend for convenience in parking

- Facilities may need to compete with each other in built-up urban areas for customers – easier to comparison shop

- Very early stages of bundling parking with merchant transactions and promotions

  - Search, Social-networking/Review captures local services (e.g Yelp)

  - Most speculative – Nav/parking may trigger a "check-in" for merchant solicitation

- Cities want to use parking to improve mobility – 30% of congestion caused by search/cruising for parking

Report

- Released December 12, 2012

- Other Research Work

  – ITS Market Data Analysis Series

  – Technology Scan and Assessment Series (USDOT) (link)

    - Fourth Generation Wireless and the Vehicle

    - Vehicle Electrification and the Smart Grid – Safety and Mobility Services

    - Advanced Driver Assistance Systems to "Self Driving Vehicles" (Future)

    - Cybersecruity and Risk Management in Intelligent Transportation (Future)

    - Insurance Telematics (Future -TBD)

THANK YOU

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