ACME Innovation Inc.?

- Applied consumer based applications
- Team of software and hardware experts
- Creators of ParkingCarma
What is Smart Parking?

- **ParkingCarma** is:
  - the consumer based dynamic parking guidance service that maximizes parking convenience and utilization.
  - The future of LBS that leverage speech tech.
  - Increase ROI for Parking Management with it’s Patent pending DSS-PGS.
  - ParkingCarma is the Award winning congestion mitigation and sustainable economic development SmartParking application
    - {ITS (Inelegant Transportation System), Red Herring, Telematics Update, and Now SpeechTEK} SmartParking Technology
Why ParkingCarma?

- Inefficient use of parking resources
  - user inconvenience and under utilized inventory!
  - traffic congestion as users seek available space
  - lost revenues due to inability to reach customers
  - lost revenues due to the high cost of rogue parking
  - opportunity cost of creating additional parking
  - parking restrictions generally over-broad, leading to punitive enforcement and inefficient utilization
  - negative environmental and economic impact due to construction and increased poor VMT’s
Business Concept

* Create an intelligent software engine that leverages: IVR, wireless micro-mesh networks, and multi-channel communication devices and software.

* Increase customer convenience which maximizes return on parking resources for all constituents!
Consumer Benefits

- Actionable guidance to available and most convenient parking – based on user preference and dynamic data
  - Coin/cashless payment (monthly billing and draw down)
  - Pay for actual use and added benefits
  - Higher availability through “dynamic space sharing”
  - Reservation capable – last minute and planned events
Parking Provider Benefits – private / public (off street)

- Increase competitive position
  - reach the customer in route!
  - Usable software designed from the customers viewpoint without the in house cost of development!
- Premium service revenues without substantially increasing cost of operations
- Increased revenue through higher utilization
- Auto-billing reduces cost of onsite payment collection
- Enhanced community relationships – safety and environmental
Automotive Industry Benefits

- Improved driving experience
- Compelling info application for telematics – “every one needs to find, park, and pay for parking”
- Auto in inter-modal commute
- Convenience offsets increasing cost of driving
- Increased driving safety
- Enhanced community relationships – safety, environmental, and convenience
How ParkingCarma works...

**Architecture**
- Dynamic space inventory management
- Reservation/decision engine
- Communication brokers
ParkingCarma Architecture

Data Sources
- 3rd Party Systems
- Mapping Information
- Parking Inventory

Web Services

Internal System Components Broker

API

Check Availability (Real Time)

Communication Broker

Access Points
- Customers
- Web
- Email
- Mobile Phone
- In-vehicle Device

Space Inventory Management
- Wireless ultra-wideband/802.11b(a)
- Master Node/Gateway
- Turtle Sensors (Cluster wireless Nodes)

WAN Communication
- DSL/Wireless/T-1

Enforcement

Billing Management

ParkingCarma: Reservation/Decision Engine

1. Master nodes query turtle sensors for availability
2. Master nodes update parking inventory database
3. Customer requests space
4. System queries database and reserves spot
5. Turtle verifies spot is in use

Custom Reports

This diagram contains confidential information related to Acme Innovation’s ParkingCarma Technology.
Parking “Hot Spot” Overview

- Dynamic Space Inventory Management:
  - Server Clients structure
    - Low cost MEMS technology redeployed for lot management
    - Proprietary gate software system
    - Video imaging counting
    - GPS BASED mesh cell layer
  - And DATA FROM SPEECH TECH SYSTEM!
PILOT OBJECTIVES

- Demonstrated Smart Parking In a Transit (BART) Application AND Urban with the San Francisco DPT and Navteq
- Increase Commuter Ridership and Better Utilize Fixed Parking Assets
- Collect And Analyze Information On Customer Use And Satisfaction
- Transition Pilot To Scaled Model Deployment - In work now --- More SOON!
See the Sign, Park at BART

BART PARKING
29 SPOTS

RESERVED

MILES AVENUE

KEITH AVENUE

COLLEGE AVENUE

ROCKRIDGE STATION
Changeable Message Signs

- Both signs operate 7:30 a.m. to 9:30 a.m. (or ‘Lot Full’)
- Caltrans determines message on CMS
- Difficulty with one sign in first few months
Hardware and Technology

- Voice/IVR for ‘daily drive-in’ and confirmation
  - ALSO enables counting accuracy!
- Live customer support when needed - only 6% load!
- Website collects advance reservations (up to 2 weeks)
- Vehicle sensors in the lot count entry and exit
- Reservations system integrates demand
- Message signs on highway 24 report spaces
- Enforcement reporting to BART police
  - Customer satisfaction foremost
Media Response

🌟 Local Press Very GOOD!
  S.F. Chronicle, West County Times, Oakland Tribune, etc.

🌟 Radio and television Positive.
  abc, cbs, etc.

🌟 National/International Publications
  Wall Street Journal, Red herring, Wired, News week, Telematics
  World Highways, ITS International
Parking Customers Home Locations

- Drive-in
- Web-based
Customer Support On-Site

- Using Smart Parking
  - Distributed flyers in leaflet holders in smart parking area
  - Made flyers available at turnstiles by station agents

- Signage at Smart Parking Area
  - BART parking signs for smart parking
  - Larger signs within designated area
  - Signs and arrows to distinguish from monthly reserved
Daily Parking and Customer Adoption

550 Active Users; 2500 Parking Events; 82 Days of Operation

Smart Parking Usage BART Rockridge

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Customer Support Calls

- Customer support calls to Acme Innovation, Inc. helpdesk
  - 6% call rate per day
    - Most accounting and ticket adoption issues
  - Trends
    - Neighborhood residents’ initial concerns stopped in December
    - Voice recognition problems declined system upgrades: Lice plate, environment
    - Enforcement questions increased with ticketing
Customer Response

- "I love that we now have another option when the Walnut Creek and Pleasant Hill lots [upstream] are full. It prevents us from having to drive all the way to work on the occasions when there is no parking at BART."

- "It's great to be able to park at the Rockridge station before 10 am. I work out of my house on most days, but have started a volunteer job in Oakland City Center one day a week. The smart parking system allows me to take BART to my volunteer job without having to pay $15 or more to park for just a few hours."

- "It's great. I love having a parking space near the station, it makes riding BART much more enjoyable. Parking in the lot also makes me feel safer because I don't have to walk too far to get to my car."
Pilot Period Results of DSS-PGS

- Customers adopted it easily and like it!
  - IVR and Data base enabled usage
  - Accessible counting growing
- 14% new customers / 25% regained
- 20 users (10 heavy) per spot
- Urban application more desirable
  - See MashUp from ITS World Congress
  - Private Managers want Premium service
  - Congestion getting worse

08.07.06
Summary

- Demo Number: 408-200-0379
- ParkingCarma is a solution born from the convergence of:
  - Internet maturing
  - IVR maturing
  - MEMS deploying
  - Wireless service ubiquity
  - Parking industry contracting computer services
  - Increasing congestion
    - AND THE AGE OLD FACT THAT PEOPLE WILL PAY FOR SERVICE!
- ParkingCarma is a usable, practical, and deployable service that supports user and client needs.