

Evolving Telematics – Connected Vehicle Apps

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Adam Sloan

Connected Vehicle Apps

❑ Connected Vehicle Apps consist of:

- OBD-II dongle continuously connected to vehicle
- Smartphone App
- Cloud Server
- Web portal (on some Apps)



❑ Features

- Apps provide much of the same functionality as OEM telematics systems
- Many additional features have been introduced

Connected Vehicle Apps

- ❑ Many Connected Vehicle Apps currently available
 - Startup companies
 - Established companies
 - Additional entrants planned



*Drive Safer.
Drive Smarter.*



*Your car,
only smarter*



*Your smart driving
companion*



*Make Driving Safer,
Easier & Less Expensive*



*Smarter Driving,
Every Day.*



*Give Your Vehicle
a Voice*

Communication

- ❑ Bluetooth
 - OBD-II dongle communicates with Smartphone
 - Smartphone communicates with cloud using user's existing cellular plan
 - OBD-II dongle must be within Bluetooth range of Smartphone to communicate vehicle data

- ❑ Cellular
 - OBD-II dongle communicates directly over cellular network with cloud and Smartphone App
 - OBD-II dongle can continuously communicate vehicle data
 - Requires cellular data subscription for OBD-II dongle

- ❑ Can use a combination of both

Connected Vehicle Apps

❑ Retail Cost

- ~\$100 for OBD-II dongle hardware
- \$5 - \$10 per month subscription fee for some Apps

❑ Advantages

- Same App works across different makes of vehicle
- Regular updates to Apps with new features and updates
- Following consumer electronics development cycle
- Low cost and ease of replacement of OBD-II dongle hardware relative to OEM telematics systems

❑ Challenges

- User engagement
 - Market research indicates significant usage falloff after 1st month

Features Currently Available

❑ Read OBD-II Diagnostics

- Provide description of diagnostic
 - Root cause of common diagnostics – loose gas cap
- Find nearby service shop
 - Send diagnostic report
- Clear Diagnostics

❑ Accident detection

- Connection to call center
- Notify emergency contacts

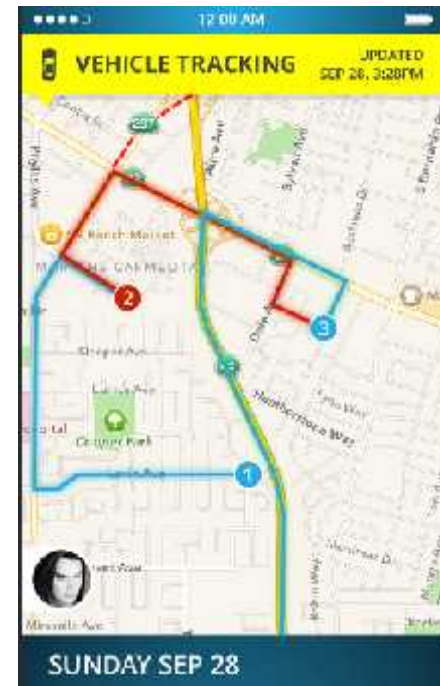
❑ Efficiency

- Efficiency score
 - Hard acceleration, hard braking, overspeed



Features Currently Available

- ❑ Trip tracking
 - Trip statistics
 - Distance driven, time, cost of trip, fuel used, fuel economy
 - Log business mileage
- ❑ Parking Location
- ❑ Vehicle Notifications
 - Low fuel
 - 12V battery
- ❑ Social Media Integration
 - Share vehicle information
 - Gamification

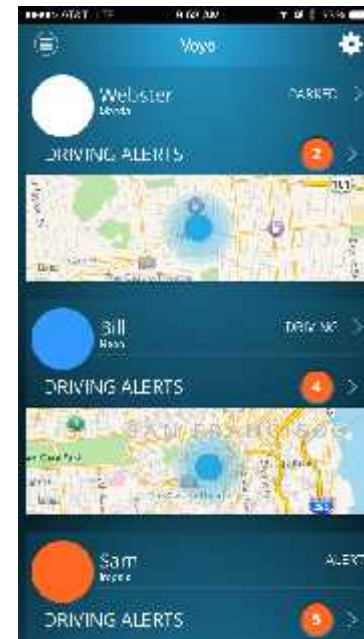


Vehicle Networks

- ❑ Group of vehicles all using same App can form a network
 - View location of vehicles in network
 - Receive alerts on vehicles in network
 - Driving Behavior
 - Arrival / Departure
 - Diagnostics
 - Vehicle Notifications

- ❑ Vehicle fleets
 - Real time monitoring of fleet

- ❑ Families
 - Teen drivers



Data Commonly Collected

- ❑ GPS Location
 - Higher power, more accurate GPS available in OBD-II dongle
- ❑ Accelerometer
 - Accident detection
- ❑ Battery Voltage
- ❑ OBD-II Modes \$01-\$09
 - VIN
 - Mode \$03, \$07 Diagnostics
 - Mode \$01 PIDs
 - Vehicle Speed
 - Engine RPM
 - Fuel Level
 - Estimated Instantaneous Fuel Economy

Advanced Features – Voyomotive

- ❑ Navigation Alerts
 - Hazardous conditions detected by drivers automatically posted to map
 - Hard braking, swerving, traction control, weather
- ❑ Advanced Diagnostics
 - Manufacturer specific diagnostics
- ❑ Advanced Vehicle Notifications
- ❑ Lock/Unlock
- ❑ Immobilization
 - Anti-theft feature uses smartphone to allow engine start
- ❑ Stop @ Park
 - Automatically shut off engine on shift to Park
- ❑ EcoStart
 - Aftermarket anti-idling Start/Stop system



Cloud Data

- ❑ Data generated by Connected Vehicle Apps has many applications
 - Provides relevant vehicle specific information when required
 - Accidents
 - Roadside assistance
 - Provides opportunity to reach customers in targeted situations
 - Routine maintenance due
 - Diagnostic set
 - Provides valuable data in aggregate
 - Traffic
 - Road conditions

- ❑ Connected Vehicle Apps must maintain strong data storage standards
 - Follow proper data storage and encryption practices
 - Users can maintain control of their data
 - Aggregate data anonymized and obfuscated