The Connected Vehicle – Telematics, Location-Based Services, and the Mobile Web Converge

Moderator:
Sam Lucero, Practice Director, M2M Connectivity, ABI Research

Panelists:
Janet Schijns, Vice President, Business Solutions Group, Verizon Wireless
Mike Ueland, Vice President and General Manager, Telit Wireless Solutions
Alex Brisbourne, President, KORE Telematics
Janet Schijns
VP, Business Solutions Group
VERIZON WIRELESS
Verizon Telematics Value Proposition

- Over 10 years of Vehicle telematics services
- Nearly 7M vehicles
- Over 100M Wireless Subscribers

- Strategic partnerships
- LTE Innovation Centers
- Customized Solutions
- Mobile Applications

- Millions of Over the Air Provisions
- Proprietary wireless Security Protocol
- Most reliable 3G network

- Dedicated Telematics Teams
- Full service telematics offering
- Specific telematics roaming agreements
Our Vision – “Rule the Road”

EMBEDDED 4G

Embedded 4G car connectivity that changes how people live, work and play

THE CAR BECOMES THE MOST POWERFUL COMPUTER YOU OWN
Embedded 4G LTE enabled Wi-Fi hotspot
In-Car Media Optimization
Your media optimized for your seat, and networked for uploading, downloading, sharing and enjoying

WiFi  Bluetooth  4G LTE
Rule the Road

**Safer**
- Integrated Emergency Services
- Simultaneous Voice & Data with IMS/VoIP
- Stolen Vehicle tracking & recovery

**Vehicle Diagnostics**
- Monthly vehicle diagnostic reports
- Dealership appointment scheduling

**Car as wi-fi hotspot**
- Connected convenience for all devices for all passengers while in car

**Navigation & Traffic**
- Off-board navigation & real-time traffic
- Predictive traffic & rerouting
- Intelligent scheduling
Rule the Road

Rear seat entertainment
- Stream / download media (video / audio)
- A better ride for passengers

New “car apps” ecosystem
- Apps that enhance a safe, in-car experience
- Passenger rear seat gaming, news, weather, music, sports, movies, etc

V2V | V2I | Home Automation
- Accident notification
- Traffic data collection
- Disaster planning
- Home Controls

Greener
- Less stop & start (via speed-through toll payments)
- Less engine idling (toll payments & parking)
Off-Peak Diagnostics & S/W Updates

During Off-peak hours, when car is not in use, it reports car log data to Dealer / Manufacturer for remote diagnostics, troubleshooting assistance, and General Fleet Monitoring purposes. Additionally, it can receive any s/w updates.
Open & Closed System to Co-Exist

Hypervisor controls secure access to car resources

Controlled Public access
Access through licensed & approved channels to personalize & entertainment:
- Limited car diagnostics
- Media
- Telephony
- Climate control
- Audio

Private access:
No unwarranted access to car system elements crucial to operation & safety:
- Body controller (locks, etc.)
- ABS
- Engine functions
- Full diagnostics
- Public safety
Fleet Management Asset Tracking

The “portable office” can be powered by an embedded computer or use the portability of a tablet that can be removed from the cab.

- Asset Tracking
- Low cost routing
- Driver safety & monitoring
- Insurance
Transforming the Telematics Services

- Internet Radio And Video
- Enhanced Vehicle OS Such As Android
- Internet Access
- Mobile Commerce: App & Content Store
- Connected Home Controls
- Built-in Wi-fi (LTE Speed)
- Off-board Navigation, Traffic, Weather, POI
- Vehicle To Vehicle Communications
- Augmented Reality
Mike Ueland
VP and General Manager
TELIT WIRELESS SOLUTIONS
• Represents the largest growth potential for M2M
• About 50 million new cars sold globally in 2009 and only 5% of them were equipped with OEM telematic systems
• Legislation such as the eCall mandate in Europe, resolution 245 of the Brazilian government create a huge market potential
• According to Allot Communications' Mobile Trends report, global mobile data traffic increased by 72% in 2009; YouTube accounted for 10% and VOIP 4%.

• Cisco reports Global mobile data traffic will grow 26 times between 2010 and 2015, to 6.3 exabytes--a billion gigabytes--per month!

• According to CTIA, SMS traffic increased from 7B text messages/month in 2005 to 173B text messages/month in 2010.
Source: ITU, Verizon, T-Mobile and Sprint
The potential impact of increasing bandwidth is revolutionary

- WCDMA (384kbps) - 21 hrs
- HSPA (14Mbps) - 2 hrs
- LTE (100Mbps) - 4.8 min

Source: GSMA
• **Usage Based Insurance (UBI)**
  – Better assignment of risk and improved customer segmentation
  – Consumer reductions in rates by 10-30%
  – Societal benefits
  – Ability to offer other types of value-added services

http://www.youtube.com/watch?v=ggWY7OPag0s
• Sub-Prime Auto Financing
  – Non-prime loans account for 38% of all new/used car loans
  – 30 million used cars sold in US in 2009

<table>
<thead>
<tr>
<th>Collection Areas</th>
<th>Without devices</th>
<th>With devices</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Accounts</td>
<td>72.7 %</td>
<td>78.6 %</td>
<td>+8.0 %</td>
</tr>
<tr>
<td>Delinquent Accounts</td>
<td>27.2 %</td>
<td>21.3 %</td>
<td>-21.0 %</td>
</tr>
<tr>
<td>Late payment</td>
<td>9.2%</td>
<td>6.2 %</td>
<td>-33.0 %</td>
</tr>
<tr>
<td>Repossession</td>
<td>15.0 %</td>
<td>12.0 %</td>
<td>-13.0 %</td>
</tr>
<tr>
<td>Skips</td>
<td>3.0 %</td>
<td>2.0 %</td>
<td>-33.0 %</td>
</tr>
<tr>
<td>Seizure costs</td>
<td>$450/vehicle</td>
<td>$150/vehicle</td>
<td>-66.0 %</td>
</tr>
<tr>
<td>Agent to Accounts Ratio</td>
<td>1:300</td>
<td>1:235</td>
<td>+8.0%</td>
</tr>
</tbody>
</table>

Sources: iMetrik, BLS, Experian
Alex Brisbourne

President and COO

KORE TELEMATICS
**KORE – Market Leading M2M Services**

- **Incorporated in 2003**
  - Consistent operating profit, positive cash, financial growth and cumulative net adds
  - Private equity: No debt; No VC’s
  - Experience – more than 750k devices shipped

- **Operations**
  - Headquartered – Toronto, Canada
  - Network Operations Centres – Atlanta, GA and Las Vegas, NV
  - Commercial Centre – Atlanta, GA

- **Services**
  - Worldwide cellular (CDMA + GSM) and satellite services delivery
  - Common “Integrate Once” Management Platform
  - Experience in all M2M segments from automotive to health, energy to security
• The ‘Connected Vehicle’ comes in many forms! They include:
  – Consumer Auto
    • Content
    • Diagnostics and telematics
  – Regulated services (examples include e-Call, AVR)
  – Industrial telematics
    • Heavy equipment management and maintenance
  – Integrated business services
    • MRM, dispatch, payment services
  – Location-aware applications
    • Traffic management, route optimization
Business adoption rapidly growing based on solid ROI

Common drivers in shipping, railroads, OTR services
  – Cost containment
    • Warranty, service interval
    • Route management, asset optimization
  – Feature enhancement
    • Preventative maintenance, service bay fill
    • Job efficiency, product differentiation
    • Value-add revenues, cash collection
  – Service optimization
    • MRM, Job management
    • Supply chain, logistics
Challenges however vary by industry

- Shipping
  - International reach, coverage, bus connectivity, power

- Railroads
  - Environmental, ownership, coverage, power

- Trucking
  - Tractor/Trailer integration, Reefer services, ‘who pays’
  - Regulatory compliance

- Local fleets
  - Integration, costs, serviceability

- Public Service fleets
  - Information sharing, investment costs, consumer benefit
• **Competing Forces are influencing consumer adoption**
  - Bandwidth/capacity needs diverging
    • Base telematics >>>> Infotainment
  - Regulatory initiatives
    • eCall, vehicle recovery,
  - Who pays the freight? (the ‘anchor tenant’)
    • Equipment, service costs
    • Sync vs. the rest
  - In-service lifecycle expectation
    • Technology base (3G minimum today)
    • Build once (single SKU) desirability
  - Consumer devices moving faster than OEM??
• **Today’s reality**
  – Auto lease control is fastest expanding sector by volume
  – Regulatory in overseas markets is influencing broad adoption faster than in USA
  – Heavy equipment services integration well advanced
  – OEM consumer telematics poor perceived value proposition need major makeover for success

• **Predictions**
  – Content based ‘gardens’ by OEM’s will fail, as did carrier walled gardens
  – Aftermarket plug-ins for diagnostics, insurance and convenience functionality will gain ground rapidly - with integrated handset apps
  – PSV adoption in USA will continue to lag market opportunity
Thank You!

Questions?