Impact of Disruptive Mobility Technologies on Global Fleet Management

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Thank You

• Shell Fleet Solutions
• Mike Antich and his team
• Fleet & Commercial Customers
• Fleet Management Companies
• OEMs
• Tier 1 Suppliers
• US Military (Congress)
Please write down your questions which we will collect for the end of the presentation.

I will be presenting at Telematics Update in Novi later today and tomorrow and would like your thoughts on Cyber Security. I will be sharing them with the audience at Telematics Update.
Tempe, AZ Accident March 18, 2019:

https://www.youtube.com/watch?v=XtTB8hTgHbM

Lesson Learned: Never Stop Testing
Boy Scout Motto: Be Prepared

Pokémon Go:
- Killed over 100 people in the first month
- Federal DOT had no way to regulate
- States DOT had no way to regulate
- As of today there is still no regulation
- Pokémon Go was launched in July of 2016
- Pokémon Go is ranked the 5th largest gaming app with 5 Million daily players

Pokémon Go is still responsible for continued traffic deaths
1. GPS Tracking Started after 911
2. The Birth of Telematics
3. The addition of Prognostics (Artificial Intelligence)
4. Machine Learning was developed out of necessity
5. Why Automated Vehicles?
6. Standards of Automated/Autonomous Vehicles
7. What else can we connect to?
8. Where do we go from here?
Mobility Story #1: GPS

911 Happened:

- Nobody could connect
- Thousands of people didn’t know where their love ones were
- The Federal Communications Commission immediately ordered all phones to have GPS abilities added to them
- General Motors enlisted the help of a company called Gearworks to make the first mobile app for plumbers using the first Motorola phones that were ruggedized with GPS
- Reduced the cost from a $2500 Symbol Device to $150 Cell Phone so we could give them away (Big Brother Watching)

Value Proposition: Reduce Plumber’s drive time while adding an additional job per day for a 20% increase in
Mobility Story # 2: The Birth of Telematics

Rick Streiff, Fleet Administrator at Access Services Called:

- Question: “Why is it I pay for OnStar and they can’t even give me my mileage for all my vehicles?”
- Approached OnStar: “Privacy Laws!”
- Make your own module and call it “Fleet Star”!
- Quality Tests in a plant and found “Opportunity”
- Value Proposition: “Do it to all GM Vehicles” and save more!
- Competition: Raised the Barrier of Entry
Mobility Story # 3: Prognostics (Artificial Intelligence)

US Military Created “Condition Based Maintenance”:
• BAE Systems developed 73% of all Military Ground Vehicles and had a reason to establish themselves as the CBM Leader
• Combined the efforts of 4 divisions of Subject Matter Experts
• Platform Solutions “Secret Sauce” was Artificial Intelligence called “Prognostics”
• Value Proposition: Save Lives in Battle by always being Mission Ready!
Mobility Story # 4: Machine Learning

Military CBM RFP:
• 60 different models of MRAP needed to be deployed with CBM and Prognostics
• The first MRAP cost approximately $9M to develop everything
• Each model thereafter was only $10,000/truck
• Value Proposition Story: Standardize your computer data so parameters can be taken off the original vehicle and applied to all following vehicles
• Follow On Value Proposition Story: We taught the program to become smarter to tweak everything it could
Mobility Story # 5: Why Automated Vehicles?

Google (Today: Waymo):
• Forward thinkers at Google saw a need and had a few accidents along the way (ie: Google Mapping Vehicle Accidents)
• Detroit took it on the chin in many different ways
  – Why didn’t they think of it first?
  – Aren’t they innovative enough to set the tone for the industry?
  – Are Californian’s better designer and forward thinkers?
• Value Proposition: They can be economical as well as safe and can reduce accidents (In theory)
If you haven't ridden in an Automated/Autonomous Vehicle, do it!

Reuters/Ipsos opinion poll, which found a variety of opinions by gender and age.

**QUESTION**
Some automakers are developing cars that can drive themselves and be used as taxis. Please indicate how comfortable you would be riding in an entirely self-driving car.

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<th>Comfortable</th>
<th>Credibility interval</th>
<th>Not Comfortable</th>
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<td><strong>OVERALL</strong></td>
<td>27%</td>
<td>67%</td>
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<tr>
<td>Male</td>
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<td>55%</td>
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<td>Born 1965-1981</td>
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<tr>
<td>Baby Boomer</td>
<td>16%</td>
<td>79%</td>
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Story # 6: Standards of Automated/Autonomous Vehicles

National Highway Traffic Safety Administration (NHTSA):

• NHTSA gave the 5 levels of Autonomy to SAE
• SAE made the levels standard for the industry
• 15 Million Miles of Testing are required to Certify One Vehicle
  – Sharing Non-Proprietary Data can increase the miles of testing
  – Validation, testing and simulation are key to a safe robust execution
• Test Centers are scaling to handle the additional miles of testing
• OEMs are adding additional facilities, roads and intersections
• Insurance companies: Either it has it, or it doesn’t
Mobility Story # 7: What else can we connect to?

Examples:
• Bikes and Mopeds: China
• Segways
• Scooters
• Skateboards
• Air Taxis
• Drones
• You Name It

How are they connecting?:
• Mobile Phone
Mobility Story # 8: Where do we go from here?

Examples:
- Blind
- Mentally Handicapped
- Automatic Delivery
- More advanced Artificial Intelligence
- Internet of Things:
  - Estimated 15 Trillion Dollars by Intel
  - Market Leaders:
    - Amazon, Google, Microsoft, Apple, IBM