2018 Communication Technology Update and Fundamentals: Automotive Telematics

Prof. Denise Belafonte-Young MFA
Lynn University
Automotive Telematics

Denise Belfonte-Young, M.F.A.

Why Study Automotive Telematics?

- With rapid technological advances, vehicles are often used to deliver goods, and traffic is an integral part of navigating the roads.
- Rapid changes and quick response times can significantly improve the safety and efficiency of transportation, and lead to greater customer satisfaction.
- Sensors and computer systems will provide help in the event of an accident or theft, enabling the vehicle owner to connect to the nearest police station and report the incident.
- Hands-free communication and entertainment features make the vehicle more enjoyable and convenient.

Background

Ford Motor Co. began a revolutionary revolution with mass production of assembly lines in the early 20th century, and today it is one of the world's largest automakers. Ford Motor Co. (2014). The history of telematics dates back to Henry Ford in 1968 to create new transportation for everyday people. Automotive telematics evolved from a desire to make transportation more convenient and enjoyable, leading to the development of vehicles and telecommunications, entertainment, and information technologies. The hallmark of today's automotive environment is the amalgamation of hands-free communication and entertainment.

Table 1.1 Evolution of Automotive Telematics

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telematics 1.0</td>
<td>Hands-free call and vision-based navigation</td>
</tr>
<tr>
<td>Telematics 2.0</td>
<td>Hands-free call and vision-based navigation</td>
</tr>
<tr>
<td>Telematics 3.0</td>
<td>Hands-free call and vision-based navigation</td>
</tr>
<tr>
<td>Telematics 4.0</td>
<td>Hands-free call and vision-based navigation</td>
</tr>
</tbody>
</table>

The Birth of the Car Radio

The first commercial model of the car radio was the 1950s. According to Gershowitz, "The first radios, by the 1950s, were of the "floor" or "wall" type, which were then connected to the automobile..." William Lander, who created the Lander, also created the first mass-produced car radio. The first FM...
What is Automotive Telematics?

Automotive Telematics can be defined as “the blending of computers and wireless telecommunications technologies”

(Rouse, 2007)
Telematics is essentially a range of different features, options and devices that are brought together by a single principle – data and communication.

Telematics enables you to get information about the location, movement, and state of your vehicle. It also enables your vehicle to communicate wirelessly, which opens up a wide range of services. (Coe, Prime, & Jest, 2014b).

https://www.google.com/search?q=automotive+telematics&client=safari&rls=en&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiRvYuznLfWAhVFVC4yYKHdoaCZgQ_AUICygC&biw=1432&bih=785#imgrc=JM3ovzpOXV6qYM:
Telematics makes your car safer, keeps you from getting lost, summons roadside assistance at the press of a button, routes you around accidents, and auto-dials 911 if you’re in the accident.

For most users, telematics means navigation, communications, safety, security, and increasing infotainment.

https://www.google.com/search?q=automotive+telematics&client=safari&rls=en&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiRvYuznLfwVfWAhVC4yYKHdoaCZgQ_AUICygC&biw=1432&bih=785#imgrc=dSUUtPh7jGtQM
Fleet Management trends

Still on the Rise…

- Self-Driving Cars
- Driverless UBER, car rental, food delivery…etc.
- Smart technology & Connectivity gone mad
- Safety features e.g. Brake sensor technology
Navigation Technology

Electric Car Charging Stations


Connectivity, Navigation, and Diagnostic Analysis

- GM On-Star system
- The Mercedes Benz mbrace,
- BMW iDrive Vehicle Control System
- Lexus Enform
- Toyota Safety Connect
- Ford Sync
- Hyundai BlueLink
- Infiniti Connection
- Honda Link

5G Technology

How Vehicle-to-Vehicle Communication Could Replace Traffic Lights and Shorten Commutes

Photo: Dan Saelinger
1. Each vehicle computes its own distance to the intersection, the distance of the vehicles approaching the intersection from other directions, and each vehicle's speed, acceleration, and trajectory. Together they elect one vehicle to serve as the leader for a certain amount of time.

2. The leader vehicle decides which direction has the right-of-way (the equivalent of a green light) and which direction has the red light.

3. The leader assigns the status of a red light to its own direction of movement, while giving the green light to all the cars in the perpendicular flow.

4. After the leader's time is up, a car in the perpendicular flow becomes the leader and does the same thing. In this fashion, leadership is handed over repeatedly.

That's all the algorithm needs to decide which vehicle gets to go through the intersection (green light) and which has to stop (red light).

Illustration: Anders Wenngren
Don’t we have this?
“Communication Technology Update and Fundamentals”

Is a great text and/or tool for any emerging media or technology course
The Book is used as a supplemental text in our Communication and Emerging Media Major course:

COM 244- Development of Technology in Communication
In Conclusion...
Keep updated with us…

What’s next?
Thank you!