Data Monetization Disruption

The automotive supplier business model is evolving quickly from software to data that can be monetized and create significant competitive barriers

Overview of analysis

February 2020
Connected cars – the primer for business model disruption

THE COMING FLOOD OF DATA IN AUTONOMOUS VEHICLES

AUTONOMOUS VEHICLES
4,000 GB PER DAY, EACH DAY

CAMERAS
~20-40 MB PER SECOND

RADAR
~10-100 KB PER SECOND

SONAR
~10-100 KB PER SECOND

LIDAR
~10-79 MB PER SECOND

GPS
~50 KB PER SECOND

Sources: Reuters, Press research
Autonomous vehicle data monetization

Sensor Data Examples:

- **Localization**: Use of data to identify a vehicle’s location in a lane, in relation to nearby objects (video and radar are utilized).
- **Planning**: Used to determine maneuvers for lane changes or safe road exit features. This also includes the ability to interpret data from signs and road conditions.
- **Dynamic**: Real time data about construction, parking, traffic and weather.

Sources: Eichenberg Research, Expert interviews, Mobileye, Aptiv, Bosch, Waymo
How road data is harvested to aid autonomous driving

HARVESTING
Collecting road and landmarks through camera and radar equipped vehicles

1

2

Anonymizing & encrypting localization data

3

AGGREGATION
Generating HD roadmap and crowdsourced data for the autonomous vehicle

4

Map tile distributed to the car

5

LOCALIZATION
Localizing the car with cm accuracy

Sources: Eichenberg Research, Expert interviews, Mobileye, Aptiv
Today’s buyers of vehicle localization data

**AV Maps**
- Scalable solution for HD maps
- Ultra-high refresh rate with real time updates

**L2+/3/4**
- Enhancing today’s ADAS with minimal cost
- See next page (Tesla)

**Non-Automotive**
- Real time data for “smart cities”
- Automatic infrastructure survey to aid city planning
- Supports “vision zero” urban initiative

Sources: Eichenberg Research, Expert interviews, Mobileye, Aptiv
How localization data enhances ADAS systems today

**Lane Centering**
- Areas without lane marks or with low quality landmarks
  - Junctions, roundabouts, urban scenarios, newly paved roads
- Availability in challenging weather conditions
  - Fog, heavy rain, reflecting road, low sun, heaving snow
- Late detection nearby unmarked highway exits
- View range and availability on very sharp curves

**ACC**
- Precise roadway understanding in areas with low quality lane marks
- Precise roadway elevation model for better control
- Continuing ACC at areas with traffic lights and stop signs
  - Traffic lights relevancy and accurate position, high quality stop line detection
- Map data on merges and exits for better planning and control

Sources: Eichenberg Research, Expert interviews, Mobileye, Aptiv

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Supplier business model disruption

1. TECHNOLOGY SALE - One-time sale of enabling tech into the vehicle; such as, sensors or ECU, at a deep discount to OEM based on recurring revenue opportunity

2. SOFTWARE LICENSE – Licensed IP which is a key element of the autonomous driving stack; such as, a key feature or functional requirement

3. FLEET MONITORING - Support network operators through AV fleet performance analytic and teleoperations

4. DATA MONETIZATION - Data acquisition and monetization through edge processing and OTA

Sources: Eichenberg Research, Expert interviews, Mobileye, Aptiv