Analytics to Improve Safety
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An estimated 2.8ZB of data in 2012 is expected to grow to 40ZB by 2020. 85% of this data growth is expected to come from new types; with **machine-generated data** being projected to increase 15x by 2020. (Source IDC)

What data can cars, devices, systems and humans provide?

- Vehicle location
- Driver’s details
- Driver’s auto insurance details
- Vehicle details
- Weather conditions
- Road conditions
- Traffic trends
- Driver’s driving pattern

Challenges in Analyzing Data

- Capturing Reliable Data
- Implementing the right solutions to analyze and interpret the data
- Balancing human judgement with data-driven decision making
- Identifying the right risk indicators / parameters
- Reacting in a timely fashion as insights are identified
- Keeping data secure

Source: Digital Technology’s effect on Insurance Survey, KPMG International, May 2014
Re-think Analytics – Business Perspective

Monetize Data

Customer Intimacy
Operational Efficiency
New revenue Models

Digital Economy
Real Time Insights
Marketplaces

Analytics - driven Enterprise

Boundaryless Information
Deliver a data platform that enables seamless & integrated data paradigm

Progressive Organization
Build progressive organization structure, culture and process to embrace new paradigms

Pervasive Analytics
Deliver sustainable business outcomes through data-science driven predictive and prescriptive analytics

Boundaryless Data Platform

Data Lakes
Master Data Mgt.
Data Grid
Real Time Processing
Platforms & DNA on Cloud

Progressive Organization
Strategy & Target Operating Model
Change Management
Simplification & Modernization
Architecture & Engineering
Data Governance & Management

Pervasive Analytics
Self Service
Analytical Workbench
Machine Learning & Discovery
Prescriptive & Optimization
Responsive Enterprise
Drivers for Change - Business and Technology Challenges

Information Needs & Challenges of DMV/DoT Jurisdictions

- Evolving Regulations
- Citizen Demands
- Fraud and Abuse
- Multiple Systems

Data Explosion in the Digital World
1. Traditional Systems, Technologies and Solutions can’t handle the big data problem!!
2. Big data adoption grows at furious pace but deriving business value, remains a challenge!!

- 70% of enterprise big data processing is still structured in nature (transaction data, log files etc.)
- 60% of enterprises have challenge identifying availability of data within
- only 12% of data is used for analysis, rest left out due to “data-in-silos”, inability to find which of the data is valuable

HOW to store TB/PB of data efficiently?
HOW to process these large heterogeneous data sets efficiently?
HOW to visualize & consume the insights derived before competitors?

Variety of Data

Drivers for Change - Business and Technology Challenges

- Safe Drivers
- Safe Vehicles
- Secure Identities
- Saving Lives
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<th>Scenarios</th>
<th>Implementation Details</th>
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| Monitoring reckless driving                   | 1. Smart Motor Vehicles - GPS should be made mandatory and as a standard feature like the backup cameras  
2. A combination of motor vehicle keys and valid driver’s license should start the car  
3. Reckless driving spikes and average driving speed exceeding a cutoff limit should auto-generate speeding e-tickets to the respective driver  
4. Traffic violation and ticketing info to be made available to defaulters on DMV websites |
| Monitoring DUI and distractive driving, temporary licensees | 1. Driver’s driving pattern (behavioral data) to be analyzed and reported  
2. When DL is flashed to start the car, if software recognizes a temporary licensee or a teenage driver, then additional validation of valid passenger license is required to start the engine |
| Improved designs for safe vehicles; Improved transport system designs and maintenance for safe roads and roadsides | 1. Intuitive driving approach similar to self-driving smart cars like auto-braking, self-parking, etc.  
2. Improved safety features like electronic stability control, protective body for shocks absorption, air cushions, Lane departure warnings, blind spot detection, etc.  
3. Real time analysis of road conditions to display dynamic speed limits accordingly |
| Road condition and weather alerts              | 1. Electronic hoardings on roads flashing the road condition like pot-holes, work zones, etc. and weather information  
2. Electronic speed limit display boards for dynamic speed limit setting to reflect real time road/weather conditions  
3. Electronic hoardings on freeways to also display alternate routes along with traffic congestion alerts |
| Monitoring of driver’s insurance and vehicle registration | 1. Insurance details to be looked up in the DMV Database based on DL number fed by vehicles  
2. Car make, model, title owner, registration details should be fed into DMV data base  
3. Insurance expiry/renewal and title registration validity details should be loaded into DMV Databases. Uninsured Drivers or vehicle owners of expired registration to receive auto-generated e-tickets |
Through the evaluation of trends and outcomes, analytics can take average of data and technology to develop strategies that can help minimize the cause and affect in traffic accidents ~20% in 2 years.
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