



# The Economics of Active Safety.

Why Toyota Safety Sense is a good  
investment for Fleet Buyers.

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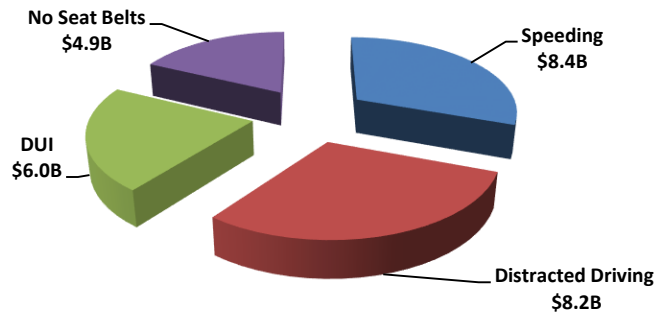


# What do fleet accidents cost?

- U.S. Traffic crashes cost employers \$47.4 billion in direct expenses.

## Economic Burden of Top 4 Crashes

Source: National Highway Safety Administration



- Average Repair Cost is \$2,600
- “True Cost” per accident - \$24,000
  - Repair Costs
  - Increased insurance premiums
  - Administrative Costs
  - Liability expenses
  - Lost Productivity (2013 – 1.6 M workdays lost because of crashes)

Source: “Cost of Motor Vehicle Crashes to employers – 2015, “Network of Employer for Traffic Safety (NETS/NHTSA).

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# Field Study Results Onboard Systems

<u>System</u>	<u>Reduction in accidents</u>	<u>Source</u>
Forward crash prevention		
- without auto braking	23%	IIHS
- with auto braking	40%	IIHS
Lane Departure Warning	11-23%	NIH
Adaptive Cruise Control	17%	NHTSA
Adaptive Headlights	3-10%	AAA
Blind Spot Monitor	4-11%	IIHS

IIHS states that 700,000 crashes would be prevented with auto braking, based on 2013 crash data.



# Insurance Industry Response

- The insurance industry has been slow to adjust premiums for vehicles having active safety technologies. Associated Press found that only two of the 11<sup>th</sup> largest insurers offer discounts for the latest “active safety devices”.
  - Only Hartford Insurance Group and Liberty Mutual offer discounts for auto braking (Hartford offers a 3% discount in IL, OH, MN, OK and AR).
- Empirical Data – Israeli Government issued a study in 2014 that found insurance claim frequency to drop by 44% for private vehicles using auto emergency braking devices.
- KPMG Study
  - 90%+ crashes are caused by driver error.
  - Accident frequency could decline by 80% by 2040
  - Prediction: Within 25 years auto insurance industry will shrink by 60%

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# Breakeven Analysis

What is the breakeven for a vehicle with auto emergency braking (AEB)?

## Assumptions:

Average fleet of 500 vehicles, 20% accident rate, 100 accidents per year

- Rear-end collisions:  $100 \times 17\%$  (Source: CEI Group) = **17**
- Prevented Accidents using AEB:  $17 \times 40\%$  (IIHS rate) = **7**
  
- Hypothetical Value:
  - \$18,200 in repair costs avoided (7x \$2,600)
  - \$168,000 in NHTSA “true costs” avoided
  
- Hypothetical Return on Investment
  - \$300,000 to equip 500 vehicles
  - Per Year ROI: **56%**
  - **Breakeven 1.78 years**

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