

Rewired for Success—Is the Industry Sustainable Going Forward?

Al Koch, Vice Chairman, AlixPartners LLP

Center for Automotive Research (CAR) Management Briefing Seminars

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Investment and cash demands in auto: extensive—and *growing*

Ongoing requirements

(~10% of sales)

- Maintenance capital
- Expansion capital
- R&D capital

Cycle-related requirements

(based on historical patterns)

- Sales slowdown-related (funding payables, bailing out troubled suppliers, sharing stranded fixed costs, etc.)
- Capacity-related (overinvesting due to uncertainty over future volumes)

Incremental requirements

(for the conversion to “CASE”—connected, autonomous, shared, electric)

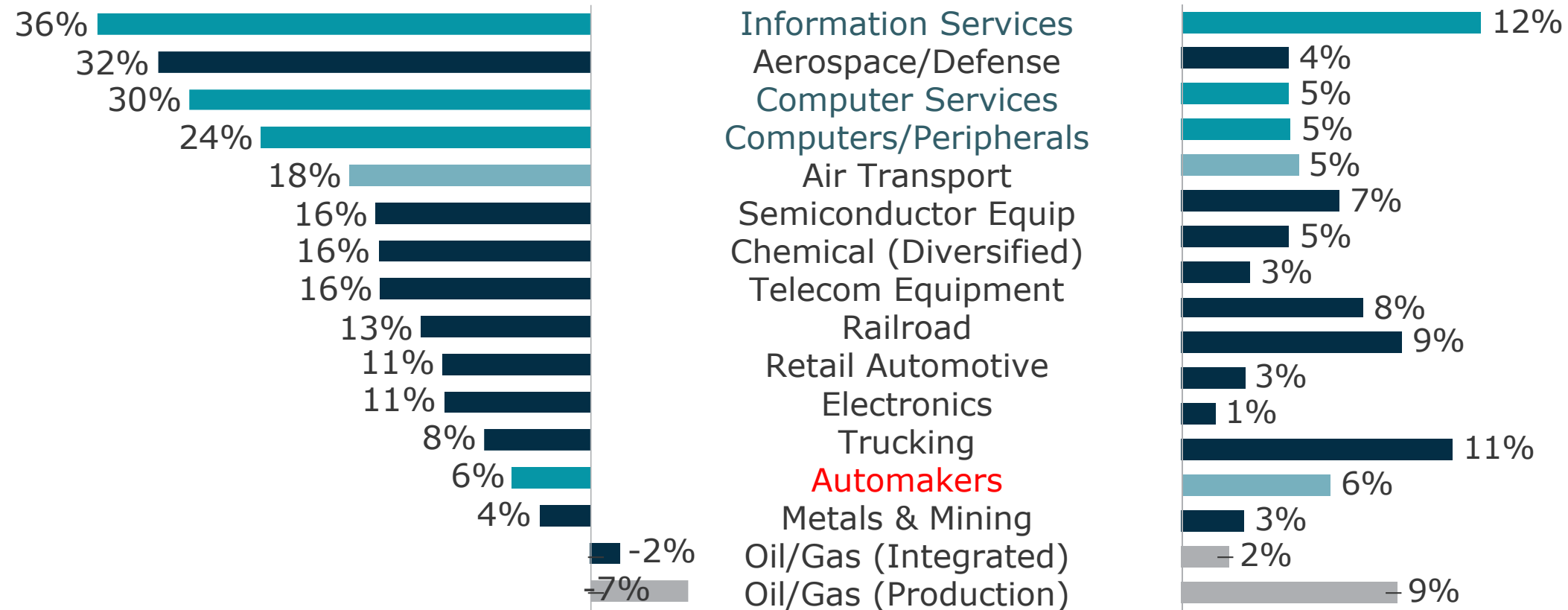
- Partnerships
- M&A
- Etc.

How much capital is enough?

Automotive ROICs pale in comparison to high-tech's

Return on invested capital (2016)

Capex + R&D/sales¹ (2016)



1. Capital IQ's Capex calculation (used here) is net of depreciation; R&D does not include acquisitions and, in some cases, double counts Capex where capitalized
 Source: Bloomberg, Morningstar, Capital IQ, Compustat, New York Stern Aswath Damodaran, and AlixPartners analysis

Why it's important to focus on ROIC, not just profits or sales

- ROIC is a principal driver of stock price¹
- Low ROIC, especially in low-growth capital-intensive industries, typically generates laggard shareholder returns:

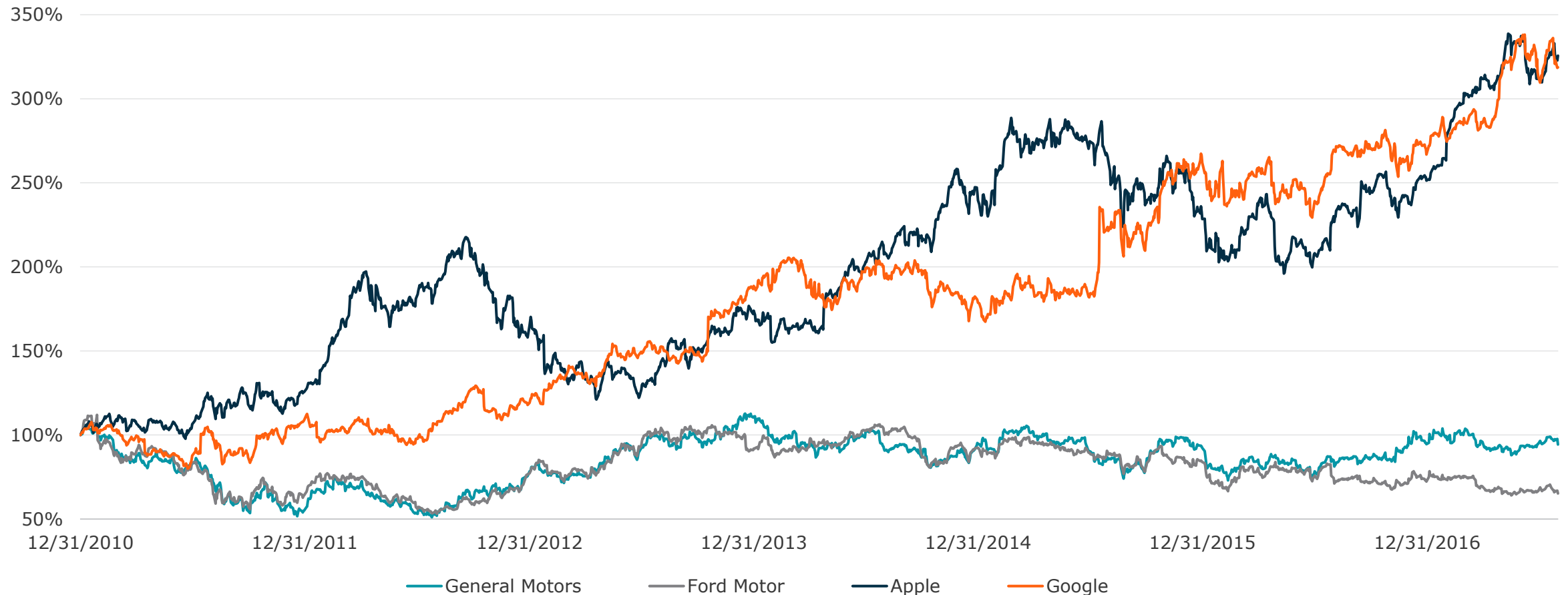
ROIC	Google	Apple	General Electric	Bosch	Ford	General Motors
2016	14.2%	19.9%	3.9%	12.7%	2.7%	5.2%
2012-16 Avg.	14.1%	26.8%	3.4%	12.7%	4.0%	8.4%

- ROIC considerations for "CASE" investments:
 - The "3 P's": Participate, Partner or Purchase
 - The key: *Having* a strategy

1. See 'Exploring Links Among Long-Termism Activist Behavior and Shareholder Return' from S&P Global Market Intelligence Research April 28, 2016; 'Why You Should Pay Attention to Companies' Three-Year Average Return on Invested Capital, by David Trainer in Forbes Magazine June 7, 2017 and 'The Sustainability of Growth vs Return on Invested Capital' by Saul Stannard-Stockton in Intrinsic Investing Sept. 21, 2016

The proof is in the pudding: Stock performance for GM and Ford, vs. Apple and Google

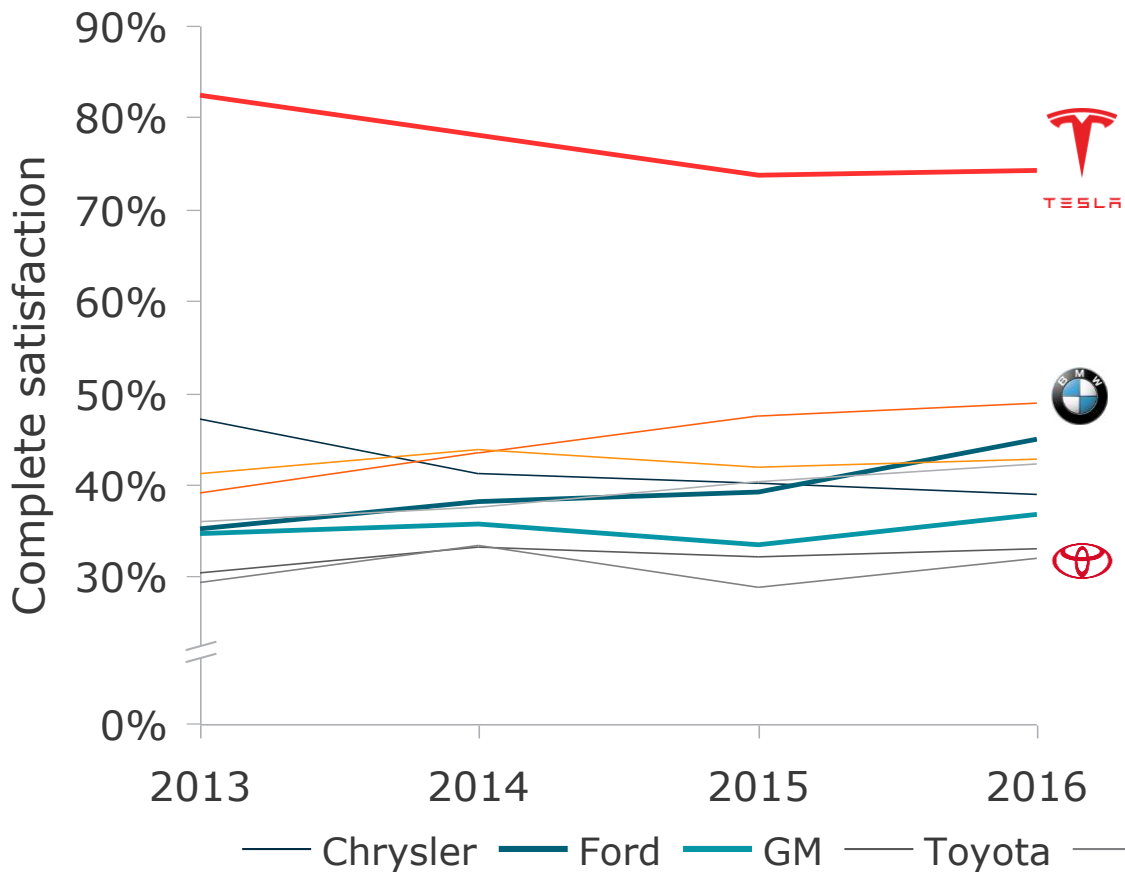
Relative stock-price comparison



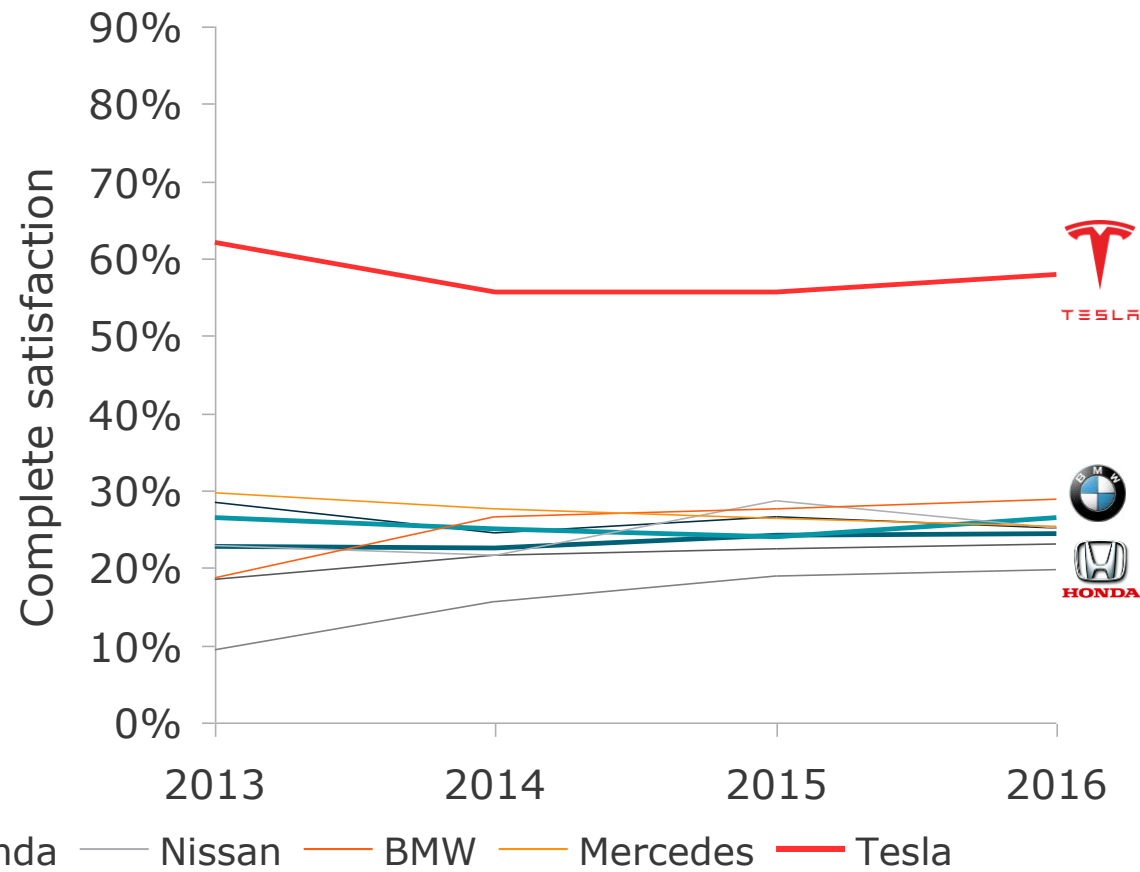
Source: CapitalIQ

A "CASE" challenge: Tesla's over-the-air upgrades and iPad-like functions—*unmatched* since 2012

Customer satisfaction: Built-in nav systems



Customer satisfaction: Downloaded apps



Source: Maritz, AlixPartners analysis

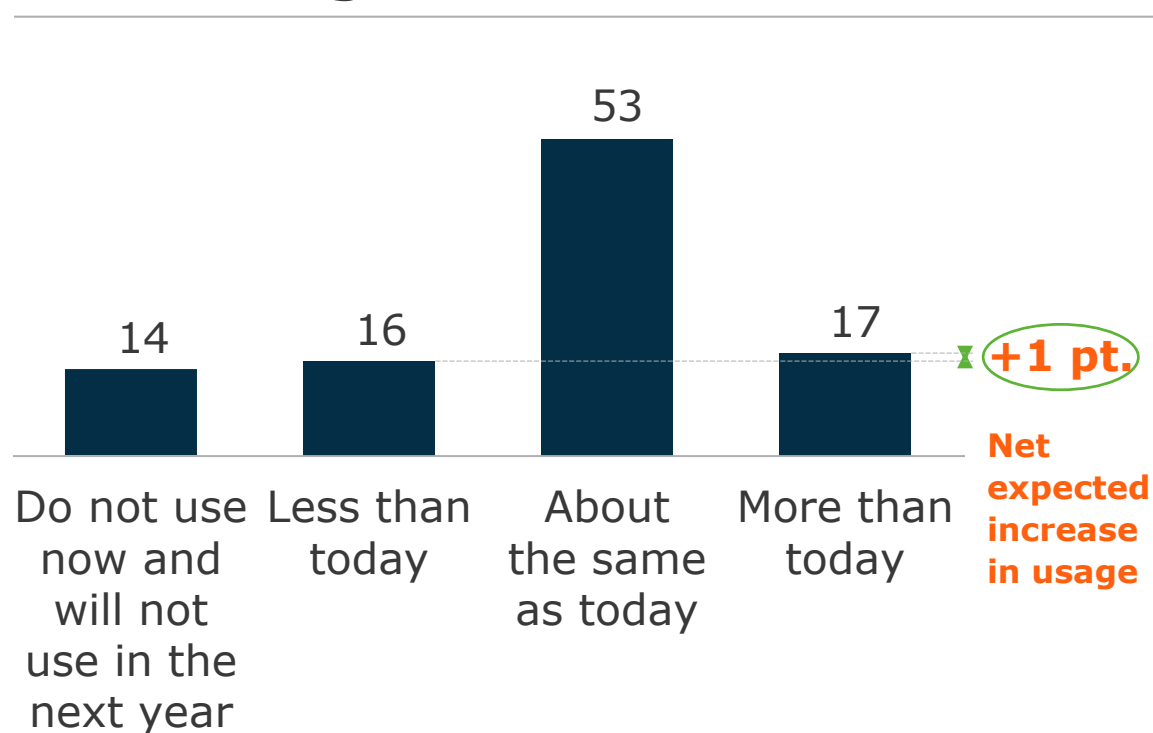
AlixPartners' finding: More than 50 "name" companies are now working on autonomous vehicles or systems



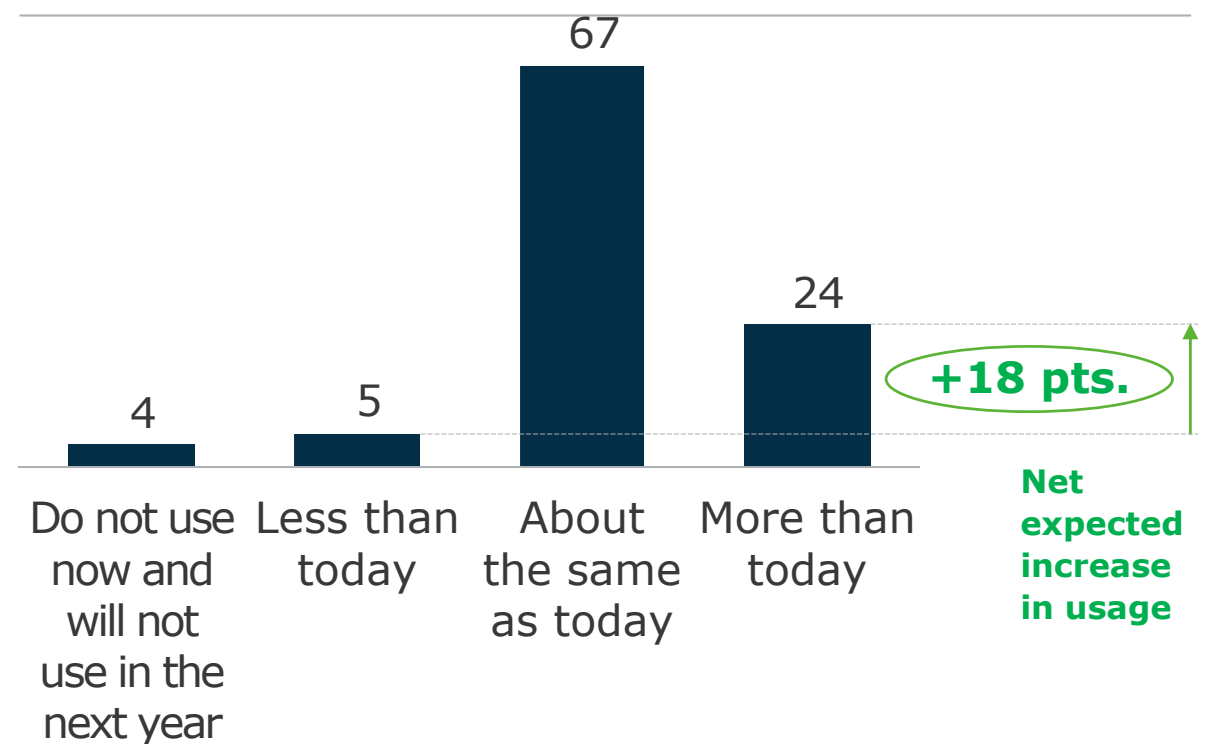
Example of how fast “CASE” can change: Car-sharing stagnating; ride-sharing up (per AlixPartners survey)

Intended usage in next 12 months vs. today (%); US consumers

Car-sharing (Zipcar, Car2Go, etc.)



Ride-sharing (Uber, Lyft, etc.)



Questions: “In the next 12 months, how do you think your use of car-sharing will compare to your use now?” “In the next 12 months, how do you think your use of ride share will compare to your use now?”

Source: AlixPartners consumer survey May 2017

Could “NIH” (not-invented-here) sabotage ROIC?

AlixPartners’ finding: **294 “CASE” partnerships by OEMS**, including:

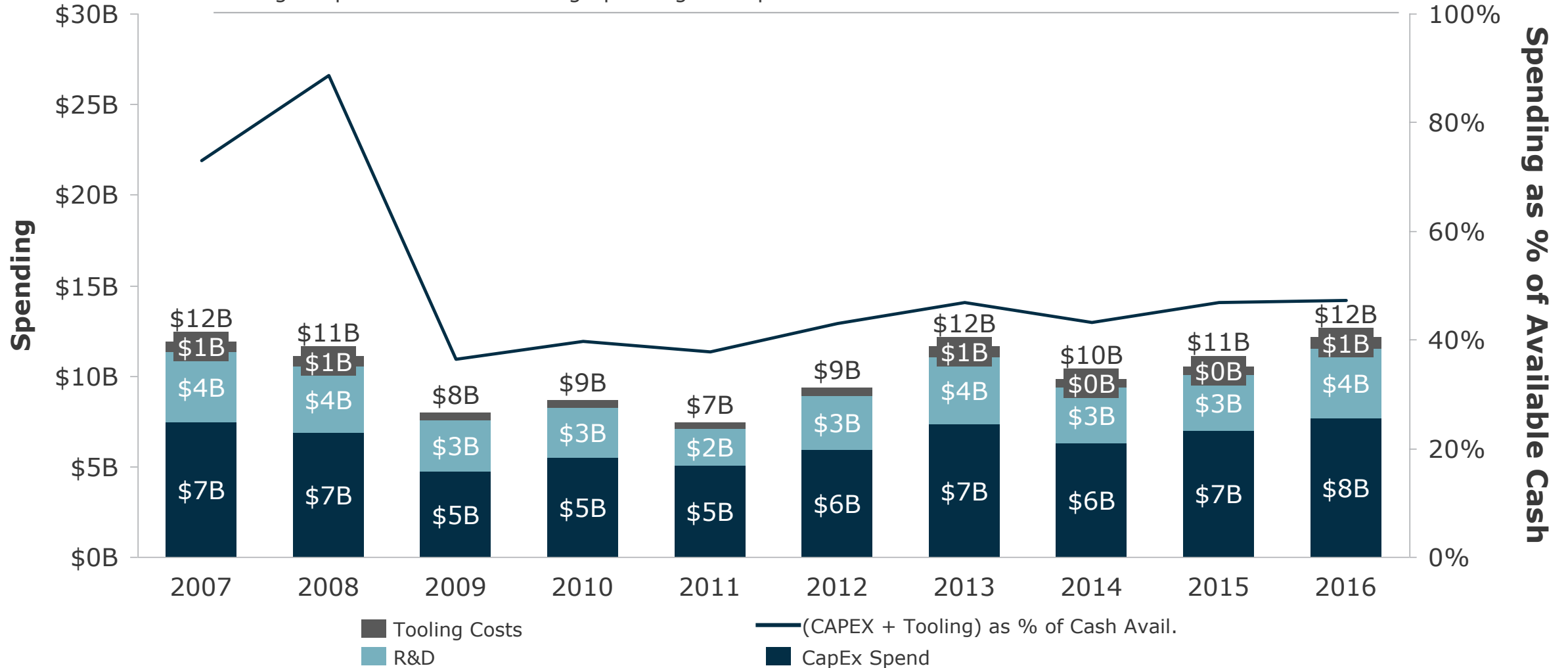
- **Ford: 15** (Ford produces approximately 7% of world’s vehicles)
- **GM: 11** (approximately 8% of world’s vehicles)
- **Volkswagen: 15** (approximately 11% of the world’s vehicles)
- **BMW: 32** (approximately 3% of world’s vehicles)

Efficient use of capital suggests that:

- The industry should consider making greater use of tech companies **where their technology know-how can be an advantage**
- Keep ROIC top of mind--including developing **“asset-light”** approaches

Average spending already equals half of available cash; upcoming "CASE Bump" likely to strain balance sheets

Average Capex + R&D and Tooling Spending for Top 20 Global Automakers



Note: Tooling costs are estimated at ~15% of annual R&D spend per OEM
 Source: Capital IQ, AlixPartners analysis

Returning to: *“Is the industry’s capital adequate?”*

“Yes,” if:

- ROIC is always, **always** kept in mind,
- ROIC **improves significantly**, and
- “NIH” doesn’t get in the way of **business objectivity**

Otherwise, the answer may be...

*"Those who cannot
remember the past are
condemned to repeat it."*

GEORGE SANTAYANA, PHILOSOPHER
(1863-1952)

AlixPartners
when it really
matters