

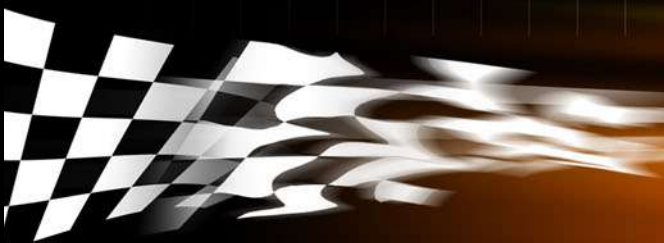
# SEMA

## VEHICLE TECHNOLOGY

CRASH AVOIDANCE AND CRASH CAUSATION



SAE GOVERNMENT-INDUSTRY MEETINGS  
WASHINGTON DC, USA  
28 JANUARY 2010



JOHN WARANIAK  
VICE PRESIDENT VEHICLE TECHNOLOGY



# VEHICLE TECHNOLOGIES

IDENTIFY AND PRIORITIZE CRITICAL TECHNOLOGIES

- Active-Passive Safety **Systems**
- Mobile Electronics **Integration**
- Connected Vehicle **Technologies**
- Alternative Powertrain **Vehicles**



Driving Green

Driving Connected

Driving Safe

Driving Cool

FOUR MEGATRENDS IMPACTING THE AUTOMOTIVE AFTERMARKET

DRIVING GREEN, DRIVING CONNECTED, DRIVING SAFE AND DRIVING COOL

VEHICLE TECHNOLOGY IS INTEGRAL TO ALL FOUR



DRIVING GREEN



DRIVING CONNECTED



DRIVING SAFE



DRIVING COOL



# KEY MESSAGES

CHALLENGES - OPPORTUNITIES - SOLUTIONS

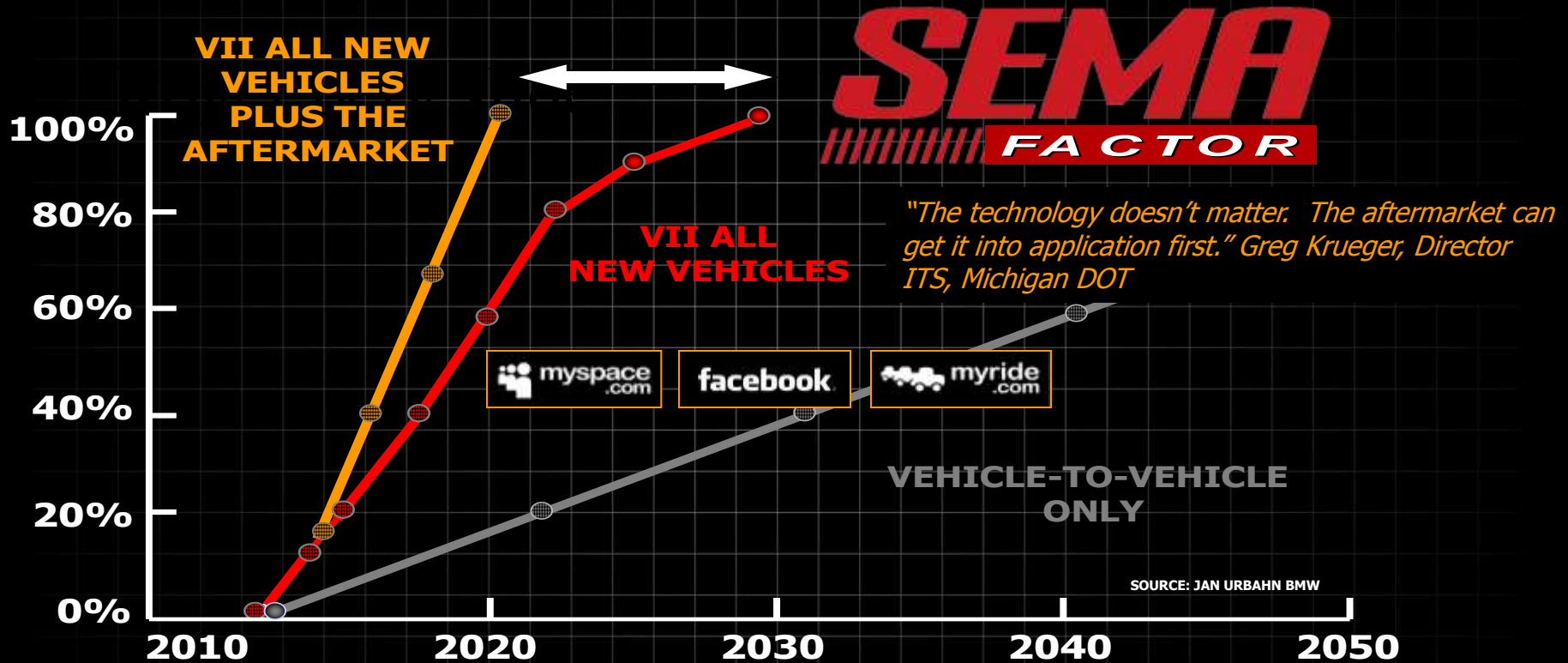
- Alignment with IntelliDrive – Safety, Mobility and Environment
- Vehicle Technologies – Creating Consumer Acceptance
- Social Utility Trigger Point – Aftermarket Accelerates Deployment
- Lean Customization – Commonization Drives Customization
- OEM-Aftermarket-Retail Collaboration – Profitable Personalization
- Long Tail Business Model Dynamics – Democratized Disruption
- Connectivity Today – Bridging OEM-AFT with Gateway Modules
- The New Normal – Reinvention of Automobiles and the Industry

OPEN ARCHITECTURES DRIVE INTEGRATION  
INTEGRATION DRIVES INNOVATION AND GROWTH  
SEMA-CEA Automotive Electronics Connectivity Committee (AECC)



# SEMA'S ROLE

ACCELERATING DEPLOYMENT THROUGH THE AFTERMARKET



220 M VEHICLES ON THE ROAD – 15 M NEW VEHICLES – PRIVATE SECTOR

CROSS-INDUSTRY CROSS-ASSOCIATION COLLABORATION  
 CARS THAT DON'T CRASH AND DEVICES THAT DON'T DISTRACT  
 SEMA-CES SUPERSESSIONS 04NOV09 AND 07JAN10



# HYPE CYCLE

## EMERGING TECHNOLOGY EVOLUTION

VISIBILITY

Peak of Inflated Expectations



DRIVING CONNECTED

Plateau of Productivity



PEVs

VII

IntelliDrive ICEs

Slope of Enlightenment

Trough of Disillusionment

Technology Trigger



TIME + MATURITY

ALTERNATIVE POWERTRAINS AND VEHICLE ELECTRIFICATION

Source: Gartner



# VEHICLE TECHNOLOGY

## ACTIVE SYSTEMS TIMELINE

# EVOLUTION

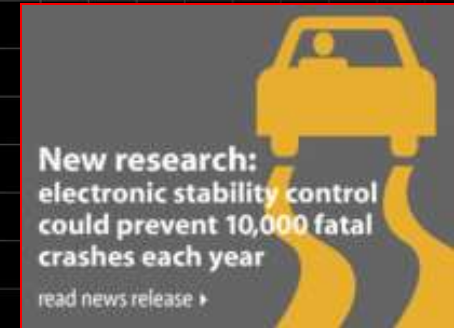
DRIVER WARNING and  
DRIVER ASSISTANCE  
SYSTEMS

**CarSim**

Mechanical Simulation

**dSPACE**

- Alcohol Impairment Detection (AIS)
- Intersection Collision Avoidance (ICS)
- Automatic Collision Notification (ACN)
- Road Departure Warning (RDW)
- Automatic Braking Systems (ABS)
- Rear Collision Avoidance (RCA)
- Brake Assist Systems (BAS)
- Blind Spot Warning (BSW)
- Lane Departure Warning (LDW)
- Roll Stability Control (RSC)
- Adaptive Cruise Control (ACC)
- Night Vision Systems (NVS)
- Electronic Stability Control (ESC)



2006

2010

2014



Source: Joseph Kianiantra NHTSA



# DRIVING CONNECTED

BUILT-IN BEAMED-IN BROUGHT-IN

ONBOARD-VEHICLE .CAR

VEHICLE-TO-VEHICLE .NET

VEHICLE-TO-ROADSIDE .ROAD



GUI

COGNITIVE  
SAFETY  
INTEGRATION

TUI

VUI

OPEN ARCHITECTURES DRIVE INTEGRATION  
INTEGRATION DRIVES INNOVATION AND GROWTH

SEMA-CEA Automotive Electronics Connectivity Committee (AECC)



# SEMA-CAR

INDUSTRY RESEARCH

SPECIALTY EQUIPMENT INDUSTRY FORECAST SERIES

- **Phase I Report – The Specialty-Equipment Company of the Future: Guideposts for Technology Forecasting and Strategic Planning** was released at the SEMA CEO Roundtable on 26 JUL 2008
- **Phase II Report – Powertrain Forecast and Analysis: What is Coming and What are the Implications for the Specialty-Equipment and Performance Aftermarket Industry** was released at the SEMA State of the Association meeting on 01 AUG
- **Phase III Report – The Major Determinants of US Automotive Demand: Factors Driving the US Automotive Market and Their Implications for Specialty-Equipment Suppliers** was also released at the SEMA State of the Association on 01 AUG



# OPEN PLATFORMS

CRASH AVOIDANCE AND CRASH CAUSATION

INTEGRATING POLICY, TECHNOLOGY AND APPLICATIONS



DRIVING GREEN



DRIVING CONNECTED

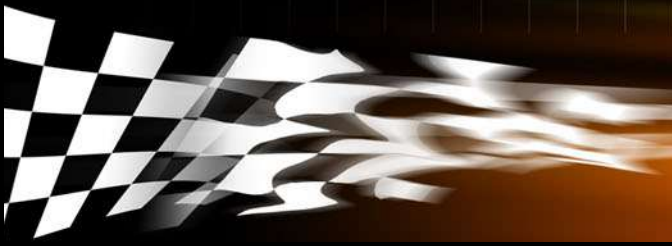


DRIVING SAFE



DRIVING COOL

“Collaboration in many ways is an unnatural act. It’s not easy to work together as a team. What we are looking at is reinvention of the business model and changing how you think about the way we do things . Clearly, there are reasons why the OEM and Aftermarket need to come together and collaborate more effectively ...” **Dave Cole, CAR**



THANK  
YOU.

