

# 2013 Society of Automobile Engineers Global Leadership Conference - Jim Lentz

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Good morning.

Let me start by thanking all of you for your hard work... dedication... and commitment to the auto industry. Your efforts as automotive engineers continually help manufacturers meet and exceed our customers' expectations for what they want and need from their transportation.

You know a long time ago... I briefly wanted to be an engineer.

But... there comes a time in a person's life when they just KNOW that something isn't the right path for them.

My moment of clarity came on the eve of my son's fifth birthday.

My wife and I bought him a bike that had on the outside of the box those dreaded words...'some assembly required.'

Well... since I THOUGHT I wanted to be an engineer... I figured... no problem.

I even thought it was okay when I had a few extra parts left over...I mean, what's the harm, right? It was only a few pieces.

Well... turns out the remaining parts I had were to help control the steering.

So... the next day when my son took his new bike out for a spin... he ended up in the neighbor's hedge.

He was Ok, but that's when I decided... maybe something ELSE in the auto industry would be better suited for me.

So... I hold what YOU do for the auto industry in the HIGHEST regards! And...it's an honor to join you today at the beautiful and historic Greenbrier.

Since 1950, auto industry engineers have assembled here...to identify challenges to the industry, map out solutions, and, if they're lucky, to shoot their age on the golf course!

Today, sixty-three years after the first SAE meeting, the industry faces challenges of a dynamic and global scale.

Today, I want to talk about three:

- Consumer demand for vehicles that are safer, more fuel efficient and still affordable;
- Helping drive the U.S. economy to a full recovery;
- And, the industry's role in creating more intuitive and active cars of the future.

Designing and implementing processes to address these challenges will require an even GREATER collaboration between automakers and engineers, state and federal policy makers, regulatory agencies, universities and research institutions.

Today, when drivers get behind the wheel, what do they want?

As we say at Toyota... they want to "Go Places."

They want to go in a car that was engineered with fuel efficient technologies that require fewer trips to the gas station...and features to keep them and their family safe.

So, automakers and engineers are responding to consumer demand for higher MPG vehicles, with an expanded offering of:

- more efficient internal combustion engines...
- hybrids...
- electric...
- and alternative-fuel cars, including the next generation ... vehicles powered by hydrogen fuel cells.

For Toyota and Lexus, we have 12 hybrid models here in the U.S., that's helped us sell more than two million hybrid vehicles in this country, 70% of the hybrid market, and over five million hybrids worldwide.

As a result of our hybrids alone... approximately 34 million tons of CO2 emissions have been kept out of the air...and consumers have saved a lot of money at gas pumps.

And we're not alone in this quest.

Currently, the entire industry features 51 hybrids, 14 clean diesels and 11 electric vehicles.

So you can see, automakers are collaborating daily with engineers, regulators and research institutions to offer more models with higher miles-per-gallon ratings, more hybrid and electric models, and developing plans to quickly increase their lineups of fuel efficient and sustainable vehicles.

Each of these achievements alone represents the attainment of a lofty goal. But as an industry...we don't merely

work toward goals... we keep running the race, and there IS no finish line.

And for the industry, when it comes to safety... it's more than a commitment to engineering excellence or a marketing slogan.

It's a commitment to people...the people who purchase our products, their families and loved ones, and the immense pride we, as automakers, designers and engineers, take in building vehicles and seeing them on the road.

One way Toyota tries to demonstrate this commitment is through our Star Safety System, a suite of safety components that comes standard in every new Toyota model that range from Vehicle Stability Control...to Brake Assist...to Traction Control.

And, Toyota's commitment is not just about OUR cars.

We're also enhancing vehicle safety through our Collaborative Safety Research Center... or CSRC for short.

At this Center, our engineers define critical areas of study, proactively seek partners with whom we can collaborate, and work closely with our partners to achieve results that will mitigate traffic injuries, improve transportation systems and develop new vehicle innovations.

Our CSRC projects include:

- Working with the University of Michigan to protect senior drivers and passengers by studying the relationships between age, and how a driver sits in the vehicle due to posture and body shape.
- Collaborating with Wake Forest University to develop vehicle computer systems that notify first responders in the event of a collision, and predict the likelihood and severity of occupant and driver injuries.
- Supporting the Children's Hospital of Philadelphia, in establishing a database that will help the hospital collect the best child-specific crash injury data so we can find new ways to improve the safety of child occupants in motor vehicles.

To date, CSRC has partnered with 16 universities, hospitals, research institutions and federal agencies on 26 projects. Toyota has committed approximately \$50 million over the next five years to fund the Center and its research.

And the best thing about the Center, we're sharing our findings with the ENTIRE industry, so ALL consumers can benefit, no matter what vehicle they choose.

In addition to safer and more fuel efficient vehicles... our industry is helping the U.S. to a full economic recovery... the proof is in a number of measurements.

- The latest government reports show that both personal income and disposable personal income continue to rise.

- The auto industry has experienced three straight years of at least 10 percent increases in year-to-year sales. And, according to analysts, this year, automakers will sell about 15.5 million vehicles... up nearly 7-percent from last year... although it's tracking higher right now.

Along with the improving economy, I'm excited because Americans strongly support U.S. manufacturing.

According to a recent poll, 92 percent of Americans said manufacturing is the most important sector for a strong economy. (Source: [autoalliance.org](http://autoalliance.org) "Auto Index" poll). That's an encouraging statistic, not only for automakers, but for the future of our economy and the communities where we assemble vehicles and components.

No other single industry is linked to so much of U.S. manufacturing or generates so much retail business and employment as the auto industry.

Nationally, 8 million workers and their families depend on the auto industry. Each year, the industry generates 500-Billion Dollars in paychecks, and 70- Billion in tax revenues. (Source: [autoalliance.org](http://autoalliance.org) "Auto Jobs & Economics" section).

Further, direct industry spending goes beyond investing in employees.

In 2011, the industry led all other manufacturing sectors with nearly 12-Billion Dollars in capital expenditures. The auto industry also invested over 301-Billion Dollars to acquire raw materials and other commodities used for production... outspending all other manufacturing sectors except the petroleum industry. (Source: [autoalliance.org](http://autoalliance.org) "2013 Jobs Report" section).

And... as global demand for products increase... the U.S. auto industry, including Toyota, will rise to the occasion to meet the demand overseas.

In fact, in 2012, we exported approximately 124-Thousand North American-made vehicles to 23 countries. (Source: CNBC interview with Toyota CEO Jim Lentz, September 26, 2013).

In the past 20 months, we've invested 2-Billion Dollars in plant expansions and created over 4-Thousand new jobs in North America... with the goal to meet rising U.S. demands and demand in emerging markets. (Source: CNBC interview with Toyota CEO Jim Lentz, September 26, 2013).

Related, industry investments in all aspects of vehicle R & D account for a significant percentage of U.S. economic growth. In 2011, automakers increased their R&D expenditures 15 percent, to 97-Billion Dollars. (Source: [autoalliance.org](http://autoalliance.org) "Auto Innovation" section).

At Toyota... we spend on average One-Million Dollars per hour on R & D...and we're not alone.

And that's good because America's economic recovery and future growth depend on a vibrant manufacturing sector, particularly in vehicles, equipment and components.

In addition to leading a prosperous economy, the auto industry is looking to the engineering community for the continued development of "high-level assist technologies."

These technologies actively manage the vehicle and help create a safer travel experience for drivers, passengers

and pedestrians...and many have been around for a while.

Some of the first driver assist technologies include cruise control, anti-lock brakes and stability and traction control.

More recent features include:

- Sensors to detect pedestrians
- Radar to measure the distance between you and the vehicle in front of you
- “Lane Keep Assist,” to help prevent drivers from straying from their lane
- Even vehicles that can park themselves... with some help from its human occupant.

At the same time, we recognize and respect the numerous obstacles to producing vehicles that are capable of driving themselves, such as:

- Consumer control of the driving process... Drivers simply don't want to give up control of driving, and are likely wary of riding on an interstate full of other driverless cars.
- Regulations, liability and insurance. If a car – not a driver – is supposed to be in control, who is liable in the event of a collision?
- And infrastructure: Will major advancements in vehicle technology require an overhaul of our roads, bridges and intersection signaling systems?

Instead of working to develop vehicles that drive themselves, Toyota's view of high-level assist technology is that the driver must ALWAYS be engaged. We see these technologies as a co-pilot to enhance the driver's skill levels so they can see better, react quicker and stop faster in an array of driving conditions.

As a comparison, the addition of high-level assist technology in our vehicles is similar to the evolution of piloting an airplane.

During the World War I era, pilots flew in rudimentary planes with open cockpits and limited views, relying greatly on their senses and experience to take off, fly and land.

Today, the helmets used by F-15 Strike Eagle pilots display heads-up speed, altitude and target data, freeing the pilot to focus on controlling the aircraft. In fact, the F-15 pilots no longer have to steer the plane to change direction or aim at a target. They simply move their head in a particular direction and let the plane do the work.

I'm not sure that's such a great idea in cars, but Toyota will continue to work with our engineers to incorporate more high-level assist technologies in our vehicles.

In the end, we can all be proud that our industry has developed and refined countless innovations in manufacturing and technology, creating safer, more fuel efficient cars and economic opportunity for millions across the globe, while enriching the communities in which we work and conduct business.

The key to our future success is the CONTINUED collaboration between all facets of the auto industry and engineers, state and federal policy makers, regulatory agencies, universities and research institutions.

I want to especially thank YOU...auto industry engineers...who conceptualize, design, build and implement every component in a car....and never stop thinking of ways to improve our products.

Because you care, all of our lives are better.

With our continued collaboration... I'm confident we will engineer a successful future for ourselves...our industry...and the world.

Good luck and Godspeed!

Thank you.

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