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Volume 1, Issue 2

The Dispatcher

Telematics Industry Insights by Michael L. Sena

Special interest features covered in each issue:

- Autonomous and Self-driving Cars
- Big Data
- DSRC versus Wireless Communication
- Connected Vehicles – V2V and V2I
- Third party services for eCall

Individual Highlights:

In the next issue:

- Collaboration among the car companies
- Genivi Alliance and other industry initiatives
- The *Personal Periscope* solution for traffic information

Report from Consumer Electronics Show

THE INTERNATIONAL CONSUMER ELECTRONICS SHOW (CES) is held each year in Las Vegas during the first week in January. CES 2014 ran from 7-10 January. I was not able to attend this year, but being in Las Vegas during the show does not necessarily mean you get to see the exhibits. The first year I was there with a client and they had an off-site venue. We were so busy with demonstrations and workshops that we were never able to make the cross-town trip. When I did walk the halls for the first time the following year, I understood what all the hype was about. There really is too much to see. Since then I have focused mainly on seeing what the car companies and their suppliers are doing.

Audi was first out on Monday evening, with a presentation of Audi's latest connected car news, including partnerships with AT&T and NVIDIA. NVIDIA?

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The first CES was held in June, 1967 in New York City. From '78 to '94 there were two shows each year in different cities in the US. Starting in '98 there was only one show and one site: Las Vegas. CES is owned and produced by the Consumer Electronics Association.

What to Expect in 2014

If CES is any indication of what we can expect during the rest of 2014, then mind control over electronic devices and self-driving cars are the two main developments singled out as sure bets for the future by Rob Nail in his *Future Gazing* talk in the Technology Trends Track. Autonomous/self-driving cars makes for interesting presentations, and apparently, BMW and Audi did not disappoint. BMW had a 2 Series Coupe screaming around a race track, but Audi gave demos (to the luckypress) on a real road with other cars and police serving as escorts. Both companies continue to state that self-driving cars will not appear before 2020 and that the main obstacle is legislation, but we can expect to continue to hear more about this topic in the coming year.

Toyota had its i-Road concept car in Las Vegas. I saw it in Tokyo at the ITS World Congress and started getting ideas about how this is the prototype for an autonomous city taxi that picks you up and drops you off at your door and then toodles off to its next fare.

Drone toys were big at the show, and drones are already on the market, both for hobbyists and businesses. Miniature drones have become the domain of the 'Maker Movement', and this is tied directly to 3D printing. Both are entering the mainstream and I expect to see more applications of both technologies. I wrote about a 'personal periscope' in a 2005 paper

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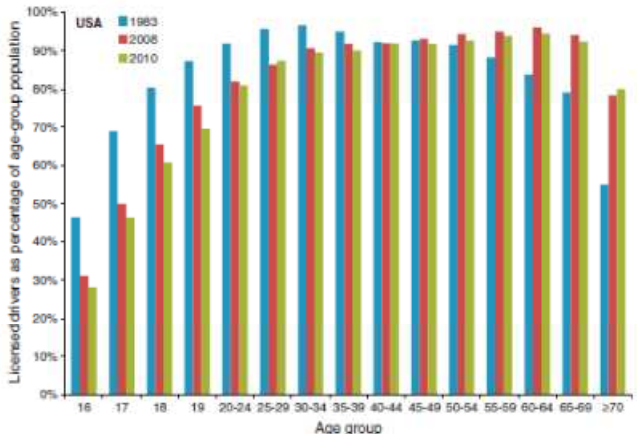
Four Trends Affecting the Automotive Business

FOUR MAJOR TRENDS will have a significant impact on the automotive business within the coming ten years. The first trend began in the late 1980s and is symbolized by the ubiquitous and diminutive caution sign adorning the back window on cars all over the world with text translated from the original English: *Baby on Board*. This was the start of what I call the *Chauffeured Generation*. Forget X, Y and Z designations! Everything about every person born in North America and most of Europe after 1977 can be traced to whether that person did or did not grow up in a family with a car. If they did, they were chauffeured to and from school; to and from play; to and from meeting places. They have grown up expecting to be picked up and dropped off and to be entertained along the way. This is causing, in my estimation, the most significant impact on the design and sale of cars and will affect the entire future of the automotive industry.

"Most parents accept that being a chauffeur is part of their parental job description. But our research proves they really go that extra mile to ensure their children can get around," explains Simon Douglas, director of UK Automobile Association Insurance.



The chart above shows one direct result of the *Chauffeured Generation's* ambivalence toward driving. It shows licensed drivers by age group in the United States. In 1983, almost 50% of 16-year-olds had a license, and close to 100% of 30-34-year olds. By 2010, the percentage of 16-year-olds with licenses had dropped to under 30%. It is also clear that older drivers are becoming predominant with 80% of +70s retaining their licenses in 2010 compared with around 65% in 1983. Some researchers (e.g. Michael Sivak and Brandon Schoettle) have suggested that there is an inverse correlation between obtaining a driver's license and the availability of the Internet. I believe that the correlating factor is having a free ride option versus driving yourself.

The second trend is the accelerating growth of megacities and the regeneration of urban cores. In those countries where most cars have been sold to-date, this is related to

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"A survey in the UK of 1,000 dads has found that they will drive their kids the equivalent of a round-the-world trip by the time they reach 18!

The poll found that dedicated dads are ferrying their children a whopping 23,400 miles over the course of their childhood.

Typically dads will ferry children 25 miles a week on school runs, sports and social events.

Some fathers admitted to putting in even more miles than that, fessing up to taxiing their offspring more than 100 miles a week for various activities.

Amazingly, dads end up spending more time playing chauffeur to their youngster than they do carrying out DIY, gardening or going to the pub! ."

the first trend in several ways. Unemployment among the younger generations is higher than it was twenty years ago, especially in Western Europe. Kids are living at home with their parents even after they finish college. While most jobs are in the suburbs rather than in the cities, it is in the depressed cities where the cheapest rents and the most available places to live are located. In the early 70s, big cities like Boston, New York and London were run down and affordable. This is where the *Baby Boomers* moved. We (yes, I admit it, I am a BB) helped to bring these cities back until only the well-healed could live there. The same is happening now with the second tier of cities like Seattle and the down-and-outers like Detroit. Jobs are following, perhaps more out of desperation to get closer to qualified workers than any sense of responsibility for improving the environment.

Amazon caused a stir recently when it demonstrated its proposed new delivery method, dropping packages at the doorsteps of customers using miniature self piloted aircraft, aka 'drones'.

The third trend is the rapid increase in Internet sales of both basic and discretionary goods with home delivery. In the 50s, the rise of the urban supermarket helped to destroy the local grocer, baker and butcher. In the 80s, out of town malls helped to gut central city retail. The big box super stores, like Walmart, undercut everybody. Now, the Internet with Amazon leading the charge is disrupting the entire retail business chain. The growth of car sales and the design of those cars is the direct result of suburbanization, shopping malls, campus schools and campus workplaces. The minivan and Baby on Board happened at the same time. When most people shop on the Internet and have their goods deposited at their doorsteps, the paradigm will shift. You may window shop at the mall, but you will buy on your computing device (phone, pad, laptop or PC).

The fourth trend is potentially the one that will have the most negative consequences for all modes of transportation, not just automobiles. It is the possibility to stay put while 'being' anywhere. Video conferencing using cameras and large format TV screens was a flop because it was based on the principle that what mattered in a meeting was *face time*, seeing other people. What companies that offer virtual meeting solutions, like *GoTo Meeting*, figured out was that it is the information being presented that needs to be shared, not the faces. I maintain that it was *Skype* that helped us understand that face time is great for personal contacts but not very useful for gathering folks around the table to have productive and interactive sessions.

Automobile transportation is only a little more than one hundred years old. It enabled a completely different world from the one it replaced. What will the next world look like when we are conducting business from our living rooms?

Owning a car in a city is a painful and expensive experience unless you can afford off-street parking. Alternate side of the street parking and business hour parking fees that must be paid daily mean that the car cannot be left even for a single day trip out of the city. The rise of taxi services like Uber are a direct result of more younger people living in cities who cannot afford their own car and who no longer can depend on their parents to pick them up and drop them off when and where they wish.

Report from Consumer Electronics Show (continued from p.1)

"Our Tegra® processors combine industry-leading CPU and GPU cores, 4G connectivity and software to serve the massive market created by Android. Android runs more than half of today's computing devices, and will sweep beyond phones and tablets through TVs, consumer electronics, car infotaintment systems and even PCs."
NVDIA

It calls itself a 'visual computing company' with a gaming heritage. AT&T? Isn't Audi tied at the hip to T-Mobile in both Europe and the US? Not any more, apparently.

AT&T's Sr. Executive VP, John Donovan spoke on the 7th as one of the *Technology Innovators*, but on the 6th in a press release AT&T announced the AT&T Drive Studio being created in its Atlanta headquarters and the Global AT&T Drive Platform. It claims that the Drive Platform will allow companies to "bring new connected vehicle services to market quickly". AT&T is offering a global SIM with global provisioning along with billing solutions. AT&T has already announced cooperation agreements around LTE with GM's OnStar and BMW.

As it happens, the AT&T Drive platform is being driven by Ericsson's Service Enablement Platform, a cooperation that was also announced on the 6th of January. Having exited the mobile phone business after its partnership with Sony fizzled, Ericsson is concentrating on offering services, software and infrastructure to telecom operators and other industries, including the automotive sector. Ericsson calls its vehicle offer the Connected Vehicle Cloud.

It was just one year ago that Ericsson announced its first automotive customer for the Cloud: Volvo Cars. So far we have not seen any fruits from that labour, but that will change in May of this year. On January 7th in a joint press conference with Ericsson, Volvo announced **Sensus Connect** using the Ericsson Cloud and the Connected Car, which includes **Volvo On Call**. Sensus Connect is an on-board system that combines infotainment, navigation and audio with connected services. The principal connected service is Volvo On Call, which has been available since 2001 and is now in Western Europe and Russia, and will soon be offered in both North America and China.

Volvo On Call uses connectivity services provided by **WirelessCar,** which is now part of AB Volvo Information Technology, Volvo Group Telematics. The Ericsson Cloud is, in a sense, a rival to WirelessCar's platform which is used globally for Volvo Cars, Volvo Trucks and for Audi in China, and until recently, for BMW. It will be interesting to see how, or whether, these two connectivity solutions, Ericsson's and WirelessCar's continue to co-exist in the future, or if Volvo follows the lead of BMW in bringing all of the telematics service provider functions in-house.

A cynic might say that Nevada was the first state in the US to allow self-driving car on public roads (June 29, 2011) because that is where Las Vegas and CES are located. In any case, the result of this legalization has been that CES is a showcase for self-driving cars. And the car companies have long understood if you have something futuristically interesting to tell the public, it makes a lot of sense to use the same air time to plug something you can sell them today. CES is therefore turning into the one of the major, and the very earliest, auto show events of the year.

This was the first year at CES that the two elephants in the room, Google and Apple, took off their stealth coats. Google announced the *Open Automotive Alliance* with Audi, NVIDIA, GM, Honda and Hyundai, and Apple had already made agreements to use its iOS in BMW, Mercedes, GM and Honda. Microsoft has been in the car for years with Ford SYNC. More on this in the next issue.

Autonomous Driving: Quo vadis?

Self-driving or *autonomous cars*: Where are we going and why? Volvo Cars, which lives and breaths the safety message, has begun a major initiative in its home city of Göteborg, Sweden to show that cars that drive without the need for humans to lay their hands on the steering wheel and their foot on the brake will prove to be safer than the human-piloted alternatives we have had for the car's first one hundred years. So increased safety is one reason we might want to buy a self-driving car.

A car that parks itself and picks up its owner when he or she is finished with business sounds perfect. *Baby Boomers* who grew up with cowboy heroes who whistled for their steeds when they needed to escape from the bad guys will surely appreciate this trick. The younger ones in the *Chauffeured Generation* grew up with *Knight Rider,* who drove K.I.I.T. (Knight Industries Two Thousand the autonomous, artificially intelligent heavily modified Pontiac Firebird Trans Am) that could perform the same trick as a horse when Michael Knight called it. Audi showed a self-driving car at CES in Las Vegas that parked itself. Reversing the process and picking up the owner should not be such a big deal.

Autonomous and *automobile* have Greek and Latin language roots. *Auto* means 'self' in Greek. *Mobile* is Latin for 'movable'. So a car is 'self movable'. But it is not self drivable. *Autonomous* is Greek for 'independent' or 'self-steering', like a self-steering country. So with self-driving or autonomous, the car is in charge, either because it does a better job of more safely getting to where the occupants want to go, or because the occupants have better things to do along the way than steer and navigate the car. These 'better things' might include answering e-mails, responding to Tweets, updating their Facebook friends or watching movies, TV programs or infovideos. It also might be enjoying a cake and liquid refreshments with the family while the car takes everyone to grandparent's house for the holidays. All of these activities (except maybe eating cake) are being forbidden by governments while driving a car—and for good reason. However, all of these activities are things we want to keep doing whether we are driving, walking, sitting still or even sleeping (the next big invention is staying actively connected while sleeping. Why not?)

When *Lite Beer* entered the market in 1986, Miller tried to convince consumers that it wasn't just to slow the down the growth of the pot belly that they should drink it; the beer was satisfyingly tasty, they claimed. *"Great Taste...Less Filling!"* they shouted. But everyone knew that the beer did not come up to the standard (such as it was) of their regular, non-lite beer, and it was not nearly as good as beers from Germany, Belgium or even Canada. People drank it because it had fewer calories.

It is a bit of the same with autonomous and self-driving cars. They may be both safer and more convenient, but car companies would not be thinking about such an alternative if they did not believe in a key consumer requirement (like not gaining weight when consuming a beverage that is normally loaded with calories). That requirement is being able to ride in a car without having to go to the trouble of driving it.

With all due respect to the safety benefits, convenience will sell autonomous cars to consumers, while the safety benefits will pave the way for the necessary legislation to allow self-driving cars on the roadways.

SMART DRIVING CARS

http://smartdrivingcar.com/TRB'14_Preview-01.06.14.html

If you are interested in autonomous/self-driving cars, the one place you should visit on a weekly basis is the site created and run by Princeton University Professor Alain L. Kornhauser, PhD: ***Smart Driving Cars.*** *In addition to being Director of the Transportation Program, he is Faculty Chair of* Princeton Autonomous Vehicle Engineering (PAVE). *The site is filled with exceptional articles, information on conferences and thoughtful commentary by Professor Kornhauser.*

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by Michael L. Sena

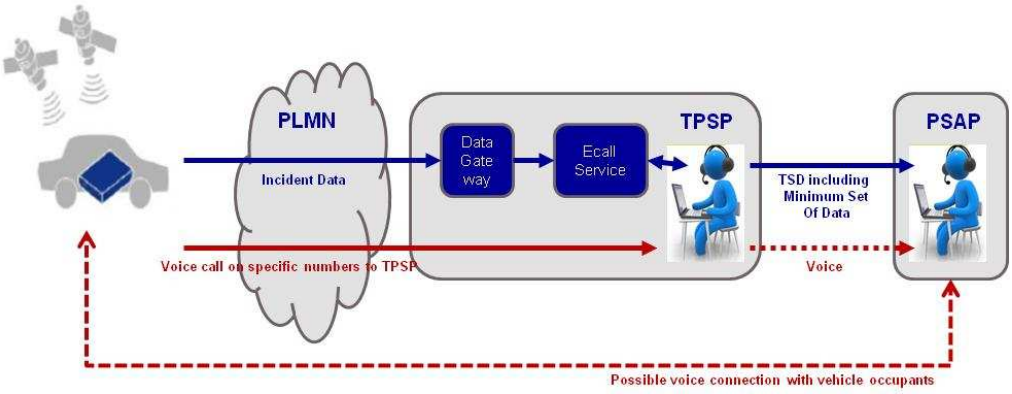
What to Expect in 2014 (continued from P.1)

I presented on future navigation systems (see my web site), and these two technologies are bringing that concept very close to reality.

For those who still watch TV on TVs (I confess, I do), curved screens with Ultra High Definition and 3D will be on next year's holiday gift list. But rather than cables or satellite receivers, Sony will be delivering programs from its very own cloud. Some of you may remember that Sony once tried to make inroads into the automotive navigation space with the purchase of a navigation system and navigable database pioneer called Etak. That ended badly for both companies, but Sony looks like it is about to make a comeback in consumer electronics so I expect to see more of them in cars starting in 2014.

Finally, I expect the major auto shows to start to look much more like CES.

Third Party Services (TPS) eCall



The first objective of TPS-eCall is to transfer an emergency message (incident data) from a vehicle to a TPSP in the event of a crash or an emergency situation, and to establish a voice channel between the in-vehicle equipment and the TPSP.

The second objective of TPS-eCall for the TPSP to transfer an emergency message including the data of the 'Minimum Set of Data' relevant information from the TPSP to the best PSAP and to make best efforts to establish a direct voice contact between that PSAP and the occupants of the vehicle if required by the PSAP. When the EC relaxed their stance and allowed TPS providers, progress started to be made with the automotive OEMs and the countries that opposed eCall on panEuropean eCall.

About Michael L. Sena Consulting AB

Michael Sena works hard for his clients to bring clarity to an often opaque world of vehicle telematics. He has not just studied the technologies and analyzed the services. He has developed and implemented them. He has shaped visions and followed through to delivering them. This newsletter touches on the principal themes of the industry, highlighting what is happening. Explaining and understanding the how and why, and developing your own strategies, are what we do together.