The Dispatcher

Telematics Industry Insights by Michael L. Sena

July 2018 – Volume 5, issue 9

In this issue:

OnStar

An experimental work in progress

Dispatch Central

Future of auto shows

Top car brands

Veoneer spins out from Autoliv

German numbers

Directive of the European Parliament

Over-the-Air Updates

Absolutely indispensable

EU on Mobility

An updated strategy document

Musings

What have we done to our postal services?

Precambrian Parking Lot

When you are a wagon maker, it is difficult to see how you could become a maker of motorized cars unless someone shows you how you can put the motor on your wagon. It's useful to have a look back at transitions that have occurred to gain a clearer understanding of what might succeed and what is probably doomed to fail. Here is a story about Fisher Body that makes interesting reading: https://en.wikipedia.org/wiki/Fisher_Body

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Learning from GM's OnStar Experiment

ONSTAR IS AN EXPERIMENT and it is still a work in progress. In the spring of 2018, GM management hit the reset button for its twenty-two-year-old sub-brand, saying that it would return to its original purpose of providing call center services to GM vehicle owners in need of assistance. If a crash or breakdown occurs, ONSTAR personnel will be there to take the call and location message and deliver the necessary assistance as quickly as possible. It will leave to the main car and truck brands, Buick, Cadillac, Chevrolet and GMC, the delivery of the other types of services it had added to its portfolio, such as satellite radio, Wi-Fi hotspot and remote access. The changes became effective in the U.S. and Canada on May 1st.

When I dug a bit deeper and looked at what the reset actually meant in practice, I found very little was being changed, at least for the moment. For example, the current three-month free trial of ONSTAR's full suite of offerings for new car buyers will be cut to thirty days for Buick, Chevrolet and GMC vehicles, while Cadillac vehicles will stay with the longer free period. Also, the Remote Access service to control key fob functions by smart phone is no longer included in the basic tier of free ONSTAR U.S. services. ONSTAR service packages have gone from three tiers to five, reinforcing my feeling that it is trying to make its service descriptions and pricing as opaque as a mobile network operator.

There is something bigger going on here, bigger than moving services around and tinkering with pricing. There are reasons why in 2016 GM launched MAVEN, its 'personal mobility' brand, rather than bundling car sharing into ONSTAR. There's a reason why GM is investing $1.1 billion in CRUISE to add to SOFTBANK's $2.25 billion, rather than funneling money into the sub-brand that brought GM to the high-tech table. It's not lack of gratitude, but a realization by GM management that what is being served at the table, and the guests sitting with them, have both changed, and GM had best change as well.

A star is born to three parents

GM took the 'skunk works' approach to its first major technology initiative, rather than allowing each of the then six brands it had to work on their own telematics solutions and perhaps choose the best of the litter. In the early 1990s, GM engineers worked alongside staff from Electronic Data Systems (a subsidiary at the time) and GM Hughes Electronics (part of GM's Delco Electronics Division) to create the first in-vehicle, wireless communications device with the associated service infrastructure to respond to calls for assistance and forward the information to the public safety answering point. Rick Wagoner, GM's President of North American Operations, introduced ONSTAR at the Chicago Auto Show in February 1996, and Chet Huber was the new wholly-owned subsidiary's first President.

During the fourteen years Huber was President and CEO, ONSTAR grew to over six million subscribers, built a market leading brand and intellectual property position, generated

revenues in excess of $2 billion, and achieved industry leading profitability. He retired from General Motors in 2009, along with most of the company's management, and ONSTAR began a new life as a division of the company although still legally a subsidiary corporation. Nevertheless, the ONSTAR brand had been firmly established, and it continued to operate as a revenue generator.

What's happening and why?

There could be both technical and management reasons to limit ONSTAR's reach. It is possible that the car lines want to be able to select their own wireless infotainment and connectivity architectures. They may feel that the ONSTAR design is too limiting, designed to fit all conditions but not tailored to their own ideas about how they want to express their unique selling points to their customers.

Internal brand competition for resources also cannot be ruled out. The Pontiac and Oldsmobile divisions were phased out in 2009 and 2004 respectively because GM felt they were taking sales from their neighboring brands, making all of them less profitable. ONSTAR is not selling cars, but because it is offered equally on all of the car lines, it is not creating anything that is unique to any of them.

When I heard the news about GM's reset of ONSTAR, I recalled an article I had saved that appeared in HARVARD BUSINESS REVIEW that specifically discussed ONSTAR as a GM subbrand. The article appeared in the June 2001 issue, was titled "Seeing Your Brands Through Your Customers' Eyes", and was written by Chris Lederer and Sam Hill.

A Molecular View of the Cadillac Brand
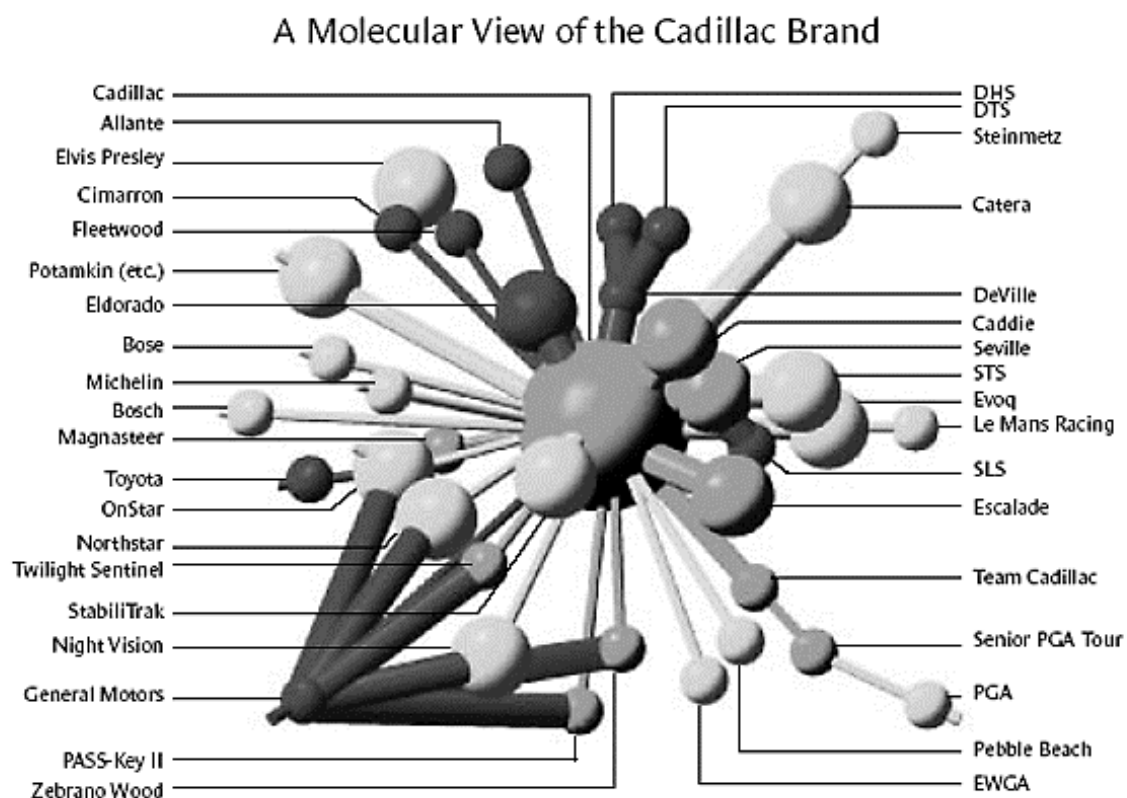
I found and re-read the article, which offered some very interesting insights. The authors created maps of brand portfolios showing the relationship other brands factor in on a 'brand molecule' for Cadillac. Note that ONSTAR is both close and large to CADILLAC in the center, and GM is both distant and small. According to the authors, this has both positive and negative effects for CADILLAC. On the positive side, a strong support brand, as ONSTAR had already become in 2001, reinforces consumers' buying decision for the main brand. However, by promoting ONSTAR, which is used by the other GM car lines, it detracts from the added value that would be specific to CADILLAC. Go to the CADILLAC web site and you are directed to the ONSTAR web site for services. It is the same for all of the brands.

Driven to distraction

The ONSTAR brand is doing more than distracting customers from the car brands; it is taking whatever luster the GM star has of its own. Mary Barra has been doing her utmost to pump up the value of GM's share price and the company's subsequent market valuation. People buy shares in GM, not ONSTAR, and taking the high-tech focus away from GM as the main object of shareholder value does nothing to help GM's main cause. It has had a 52-week high of $46.48 in October of last year and a 52-week low of $34.11 last June. This is peanuts in the tech circus, where Tesla shares sell for around $300. SOFTBANK's investment in CRUISE gives that entity a market cap of $10 billion, a fifth of its parent's.

In June, 2009, when GM entered Chapter 11 reorganization, then current stockholders lost their investments. GM closed Saturn and Hummer as well as Pontiac, and sold off Saab. There were strong rumors that it was under pressure to sell ONSTAR, which was the one unit that might actually attract a deep pocketed buyer. GM did not put ONSTAR on the block, explaining that the subsidiary was critical to GM's future. If the car brands take over more of what ONSTAR is currently providing, and initiatives like MAVEN carve out pieces of what ONSTAR could have delivered, it is not certain that there is a secure future for ONSTAR within the GM fold.

Rather than simply shuttering it, GM could decide to try to spin it off as it has dozens of operating units it either started or acquired, like Delco or EDS. ONSTAR might flourish outside of the Renaissance Tower in downtown Detroit where it has had its headquarters since 2004, co-located with parent GM. There are plenty of companies with which a freed ONSTAR could partner or which would be a perfect acquisition candidate.

Dispatch Central

Quo Vadis Circenses?

LARGE AUTO SHOWS, like those in Detroit and Frankfurt, can feel like a circus. If you are working in the auto industry, you have the feeling that the shows are meant to flaunt your company's wares to other car company staff and to give the media a chance to get a look at your latest models so they can write glowing reviews. But as you walk around the halls, you bump elbows with real car buyers and knees with their kids, who are there to decide if it will be a Toyota or a Honda that will be parked outside their home.

Two recent Automotive News Newscasts discussed whether there is a future for the big shows at a time when car makers are deciding to concentrate one or two of them and to take part in regional shows. Nissan reports that 80% of its sales leads comes from regional shows, like the one in Atlanta. AN says that 26% of first-time-buyers in the U.S. are influenced by what they see at their regional shows. Audi, BMW and Daimler have said that they will not be on the floor in Detroit in January, 2019. With CES and off-site shows taking more of the spotlight, it looks like it is time for the OEMs to start thinking hard about where they can get the best bang for their marketing bucks.

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Top Car Brand Values

TOYOTA STILL NO. 1 in 2018 in 2018 in brand value, according to BRANDZ Top in its annual Most Valuable Global Brands 2018 report. It's the sixth year in a row that Toyota has been first.

Toyota	$29,987
Mercedes-Benz	$25,684
BMW	$25,624
Ford	$12,742
Honda	$12,695
Nissan	$11,425
Audi	$ 9,630
Volkswagen	$ 5,986

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Veoneer

ON MAY 24, 2018, the Autoliv Board of Directors approved the completion of the previously announced spin-off of Autoliv's subsidiary Veoneer, Inc., its electronics segment, into an independent publicly traded company. "The strategy is to build two companies focused on and dedicated to their respective markets, which we believe will unlock substantial additional value. I look for-ward to seeing both companies prosper on their own," said Jan Carlson, Chairman, President and CEO of Autoliv, who from June 29, will be President and CEO of Veoneer. It appears that Autoliv will continue to focus on passive safety while Veoneer will concentrate on active safety and advanced driver assistance systems (ADAS). Autoliv stockholders will receive one share of Veoneer common stock for each share of Autoliv common stock. The spin-off is scheduled to be completed by the 29th of June.

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Keine Handelskriege, bitte

IN 2017, GERMANY exported a record €1.28 trillion worth of goods, 6.3% more than the year before. The car industry in German accounts for one in seven jobs (14%), one in three euros spent on innovation and one-fifth of all exports by value. In the U.S., in contrast, the auto industry accounts for 3.8% of private sector employment.

Directive of the European Parliament and of the Council
Amending Directive 2009/103/EC of the European Parliament and the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles

Pages 7 and 8…Furthermore, as regards future technological developments the impact assessment explains that the obligation of the Directive to obtain mandatory motor third-party liability insurance already applies to autonomous and semi-autonomous vehicles. The main rationale is the EN 8 EN continuous need to protect and compensate victims of accidents involving autonomous vehicles circulating within the EU. A number of accidents caused by autonomous (and semiautonomous vehicles) have occurred, demonstrating the need to protect EU citizens in case of an accident. Furthermore, the impact assessment explains that new types of motor vehicles, such as electric bicycles, Segways, electric scooters already fall within the scope of the Directive. The use of these new types of electric motor vehicles in traffic has the potential to cause accidents whose victims

need to be protected and reimbursed swiftly. However, the current Directive also provides Member States with the power to exempt such vehicles from motor third party liability insurance if they would consider this necessary. During the public consultation a number of associations representing the electric bicycles industry called for an exclusion of such vehicles in the Directive itself, arguing that requiring third party liability insurance could undermine the uptake of electric bicycles. This is not considered necessary in light of the power of Member States to exempt electric bicycles or any other new electric motor vehicles. In that case, the national guarantee funds would bear the costs of reimbursing victims of accidents caused by these new types of vehicles. This provides the highest level of protection of victims without the need for any additional EU action.

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Over-the-Air Updating Becoming Absolutely Indispensable

ANOTHER TESLA DRAMA played out in the news press in May. Once again, it brought car technology to the attention of everyone reading or listening to the daily news. This time it was not an account of a Model S or Model X in Autopilot mode crashing and killing its driver, or an Uber taxi driving in autonomous mode fatally injuring a pedestrian. CONSUMERS UNION, a nonprofit organization dedicated to unbiased product testing, consumer-oriented research, public education and advocacy, had released test results of the Tesla Model 3 in its magazine, Consumer Reports. It was not a complimentary review of the vehicle that the magazine had purchased for $59,000 due to the added cost of the long-range battery ($9,000), Autopilot and other options. Among other criticisms, it reported the following: "The Tesla's stopping distance of 152 feet from 60 mph was far worse than any contemporary car we've tested and about 7 feet longer than the stopping distance of a Ford F-150 full-sized pickup."

For those who do not know CONSUMERS UNION and its Consumer Reports magazine, it is important to note that this is not a testing house for type approval testing, like TNO or NavCert. A car company doesn't need an official stamp from CU to sell its cars in the U.S. or anywhere. However, a bad review can have a significantly negative effect on sales, just like ending up at the low end of a J.D. Power list can be a death knell.

How the test was made

CR says its braking test is meant to determine how a vehicle performs in an emergency situation. It is based on a procedure designed by SAE International, a global engineering association. The CR testers accelerate up to 60 mph, then brake hard until the car comes to a complete stop. They repeat this many times. Between each test, the vehicle is driven approximately a mile to cool the brakes and make sure they don't overheat. Dedicated braking surfaces are used and are monitored for consistent surface friction. Before each test, they make sure the brake pads and tires have been properly conditioned. CR says they have performed the tests on more than 500 vehicles, and are always looking for consistent, repeatable results.

In the first test of their own Model 3, the first stop they recorded was actually around 130 feet, similar to Tesla's findings, but they were not able to repeat these results, even after they let the brakes cool overnight. Because of the Inconsistency in the braking performance, CR

decided to test a second Model 3 (a privately owned vehicle that was loaned to CR) to verify their results. CR has tested second samples in previous situations to double-check their findings. When they ran the tests on the borrowed Model 3, they got almost identical results to those on their own car.

Car and Driver, another publication that performs tests and reports on the results in its magazine, wrote that it also experienced "a bizarre amount of variation," and that one stop from 70 mph to 0 took "an interminable 196 feet."

Only A-plus grades accepted

When CR's results became public, a Tesla representative phoned up the Director of the test team, K.C. Colwell, and complained: "Our own testing found stopping distances from 60 to 0 mph were an average of 133 feet, with the same tires as on the Model 3 you bought." Then the boss, Elon Musk, waded in. Apparently, it not at all unusual for CR to speak with the OEMs about their test results, and Colwell said he had a very productive discussion with Mr. Musk. Tesla engineers had investigated the problem, he said, and determined that the poor results were due to "calibration issues with the car's braking control system. We'll do an over-the-air update by the end of the week and the problem will be fixed."

Sure enough, a week after the negative CR test results were printed, Tesla sent out a firmware update notice. CR performed the update as instructed on the vehicle's display, and, abracadabra, the problem was fixed. Subsequent tests showed that the car's braking distance improved by almost 20 feet. Consumer Reports issued a statement on its web site saying it now recommended the Model 3.

In an email to CR, a Tesla spokesperson said that the company had improved the software for the Model 3's antilock braking system (ABS) to adapt to variations in how the brakes might be used and to respond to different environmental conditions.

"Until now, that type of remote improvement to a car's basic functionality had been unheard of," exclaimed Jake Fisher, director of auto testing at CR. "I've been at CR for nineteen years

and tested more than 1,000 cars, and I've never seen a car that could improve its track performance with an over-the-air update."

It's a whole new world out there, Jake

Let's leave the question about why Tesla engineers had not found this problem of inconsistent braking with their own testers. I have been critical of Tesla using its drivers as beta testers to find errors they should have found themselves, and now it is using consumer groups' testing labs for the same purpose. Tesla has been delivering Model 3s to customers since the 24th of December, 2017, so there were some several thousand of these cars on the roads with dangerously long braking distances. But that's another article. The point of this article is that Tesla was able to fix a problem that in the worst of cases—back in the Precambrian era of car manufacturing—got fixed in the next model update if it wasn't reason enough for a recall, or after software replaced mechanics, when the car was brought back to a workshop, connected up to the vehicle brand's workshop application and new software was downloaded.

Why does it seem that it's only Tesla that is in the OTA limelight? There are two reasons:

1. Tesla's are all battery electric vehicles; and,

2. Tesla's were designed from the ground up to be computers first, cars second.

OTA downloads can take a long time. Some of Tesla's downloads can take up to eight hours. The vehicle must be 'on' when the download of the software is taking place, otherwise the battery will be drained. That's easy with an electric vehicle. You just plug it in to a socket and leave it overnight, which is the method most recommended by Tesla. With a non-BEV, even a hybrid electric vehicle, the car must be driven during the download process. The software/firmware download server must keep track of each vehicle as it is turned on and off to pick up with an interrupted download until it is completed. The new code is now in a cache. Now the vehicle must be 'off' and locked in order for the cached code to replace the out-of-date code. The vehicle should be in a place where no one can go near it and set off the vehicle's alarm or try to enter it.

How often have we heard the question: How many people would accept owning a car that acted like our PCs and smart phones? The answer is 300,000, which is the number of people who own Teslas. A colleague told me that her husband drives a Tesla. He works for a company that develops vehicle software and driving the car is part of his job. He tells her that it is more of a toy than a car. There are days when he comes out to it and it just won't respond to any commands. Sounds like any model PC or smart phone. Well, that's the point. It is like any model PC or smart phone. Tesla designed its cars to be operated like these devices. In the Model 3, that big (rather unattractive, in my view) screen in the middle of the instrument console is the only interface to all of the vehicle's controls. There are no other knobs or buttons.

Is it game over for every other OEM?

Not by a long shot, but there needs to be much more focus by all of the OEMs on the total scope of the issue. Telsa does the main parts fairly well, but it is terrible on the details, such as managing an official recall when all owners need to be notified according to the

regulations. In order for a standardized over-the-air software/firmware update process to work in practice, it must meet the following conditions:

• It must address the entire end-to-end life-cycle processes for the vehicle and its electronics systems.

• It must use the most secure and cost-effective method for performing the updates.

• It must be designed as an integral part of owning and driving the vehicle.

• It must address the design of the embedded system, including how the system is activated and provisioned with its contact logic, and how it interfaces with the mobile network or other networks, such as Wi-Fi.

• It must address what to do when a system has been de-activated (e.g. if the customer does not wish to have an actively connected vehicle).

• The design of the system must also conform to the regulations of privacy that are in effect in the jurisdiction where the vehicle is located when the update is performed.

• Above all, the updating process should be done in complete alignment with the safety and environmental regulations that are in effect in each of the jurisdictions where the vehicles are sold.

FOTA and SOTA
IT'S NOT EASIER THAN YOU THINK

To lower costs and increase customer satisfaction, vehicle OEMs will want to use Firmware Over-the-Air (FOTA) and Software Over-the-Air (SOTA) update for both performance improvements and fault corrections, including both official recalls and non-recalls (like the Tesla braking problem). Regulators are interested in correcting faults as quickly as possible that are of a level of severity to require a recall. An eventual standard for secure over-the-air updates must absolutely address the fault correction issue, but one that covered performance improvements as well would be of the greatest value to all parties.

There are six phases of a FOTA or SOTA update once a decision has been taken by the vehicle OEM to perform an update:

1. Prepare the update.
2. Obtain regulatory approvals for the update, if required.
3. Obtain the necessary permissions to perform the update from the authorized driver or registered owner.
4. Manage the update end-to-end.
5. Confirm receipt and proper functioning of the update.
6. Perform administrative tasks.

Each of these phases must be considered in relation to the Conditions of the vehicle (location and status of connectivity), the presence of the Authorized Driver and the process for an attempt to Re-deliver the update if the primary process fails.

FOTA/SOTA telecommunications standardisation must be complemented by a set of business methods that on one hand are comprehensive enough to cover the full life-cycle of all vehicles and on the other can accommodate the individual practices of the vehicle OEMs from the time a vehicle is designed until it is taken out of service. The referenced document identifies and clarifies the business process issues that must function in parallel to the technical ones.

OTA Updating
HERE SAYS IT WILL DO IT FOR YOU

*HERE TECHNOLOGIES ANNOUNCED the launch of its new over-the-air solution for vehicle OEMs, and gave it the name **HERE OTA CONNECT**. It was created by Advanced Telematic Systems (ATS), a Berlin-based software company specializing in automotive products, which HERE acquired in January 2018.*

Its technology uses UPTANE, a security framework backed by the U.S. Department of Homeland Security designed specifically for software that runs on motorized vehicles. UPTANE claims to be the first "compromise-resilient security software solution." It was developed by the New York University Tandon School of Engineering (NYU), the University of Michigan Transportation Research Institute (UMTRI), and the Southwest Research Institute (SWRI).

HERE's OTA CONNECT technology is designed to integrate into the vehicle OEMs' TSP servers and uses opensource technology. In other words, it is not operated by HERE for the OEM. This gives the OEM total control over how the process is managed, and allows possibilities to use OTA for problem fixes and product and service sales.

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This is where we used to make cars, in the engineering workshop. Alex 'Cannonball Run' Roy says that in addition to the six car companies Soichiro Honda predicts will be left in the future, there will be MORGAN, handmade with all the quirks of a totally manually-driven sports car. Maybe there will be special roads for those who choose to drive them.
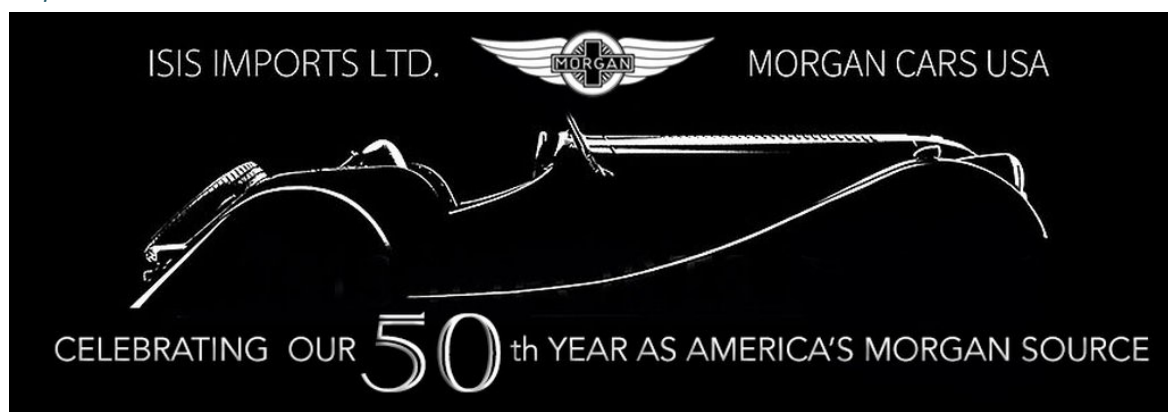
EC Publishes EU Strategy for Mobility of the Future

ON THE ROAD TO AUTOMATED MOBILITY: AN EU STRATEGY FOR MOBILITY OF THE FUTURE. That is the title of a May 17th 2018 report from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. There is no author's name or originating Directorate General other than 'The Commission'.

The biblical and literary reference in the report's title to the journey of Saul on his way to Damascus, where he experiences an epiphany (a moment of sudden revelation or insight) is perhaps a bit overly dramatic. Perhaps a more appropriate literary reference would be Chris Rea's lyrics in his ode to the U.K.'s M25: "This ain't no technological breakdown…This ain't no upwardly mobile freeway. Oh no, this is the road to hell."

The Commission's intention in writing the Communication is "to set the path for the EU, Member States, industry, social partners and civil society to work together and ensure that the EU seizes the opportunities offered by driverless mobility, while anticipating and mitigating new challenges for society." In other words, to stay off the road to hell and aim for a higher place. As is often the case with the Commission when it issues its opinions, they are meant to be edicts. It states at the outset that it "now calls upon all parties concerned, in particular Member States, industry, social partners and civil society to support the approach presented in this Communication."

The document's eighteen pages are peppered with references to the Commission's favorite themes: embedding vehicles of all types in the transport system (so they can be collectively managed); strengthening the links between collective and individual transport; sharing public and private data to enable "fair and effective competition for innovative solutions and data protection."   All players are urged to follow the Commission's direction in order to make Europe a world leader in the deployment of connected and automated mobility, which will then result in reducing road fatalities, harmful emissions and congestion.

There is an unequivocal statement on how this all must unfold: "For Europe to remain competitive and foster employment, it will be essential that the key technologies, services and infrastructure are developed and produced in Europe and that the necessary regulatory framework is in place."

Funding will be provided by the Commission to link supportive measures with key policy and regulatory initiatives, principally around a set of use cases for cars, trucks and public transport in the 2020 timeframe. Reference is made to demonstrations and large-scale testing that are already taking place in the EU Member States, supported as part of the 2014-2020 Framework Programme. There are plans for calls research and innovation calls on automated vehicle proposals in 2018-2020, with a total budget of €103 million. Research priorities include user acceptance, design of a safe human-machine interface, road infrastructure to support automation and testing and validation procedures. An additional €50 million is allocated for testing the use of 5G connectivity. Further, Connecting Europe Facility (CEF), the "funding instrument to realise transport infrastructure policy," will provide €450 million to support 'digitisation' in transport for automation.

While the U.S. backed away from actively monitoring testing of automated driving systems at the urging of its automotive and IT industry, the Communication highlights the fact that the EU is "the first region in the world to combine vehicle approval rules with market surveillance rules," and that building on this framework, the Commission will "start working on the development of a new approach for certifying the safety of automated vehicles which will be less design-specific and more adapted to the evolutionary nature of these vehicles."

Here is one statement I wholeheartedly support: "Driverless vehicles will have to share the roads or streets with non-automated cars and also with pedestrians, cyclist and motorcyclists. For this reason their deployment can only take place once overall road safety is guaranteed and not just the safety of automated vehicle users."

The Commission's final words: "Driverless mobility is still at its early stages. The long-term impacts are uncertain and will depend on how fast and how far the technology will develop and the market responds…and on how public authorities support and steer this development to ensure that all segments of society benefit. The Commission intends to continue monitoring and assessing these issues and consulting with all interested parties and may also consider regulatory activity at EU level, where needed."

Musings of a Dispatcher: For the Price of a Stamp

DURING A RECENT visit to the U.S., I went into a United States Postal Service post office, the one pictured above in Clarks Summit, PA, and purchased a stamp. Since 1971, the Postal Service has been an independent agency of the U.S. federal government. Its history stretches back to 1775 and the Second Continental Congress when Benjamin Franklin was appointed the first Postmaster General. The Post Office Department was formed in 1792, and it became a cabinet-level department in 1872. Today, it operates the largest civilian fleet of vehicles in the

entire world, one consisting of 228,000 vehicles, and it has around 500,000 employees, which is about 50% fewer than it had at its height in 1999. It has the exclusive access to all letter boxes marked U.S. MAIL, and to all personal letter boxes, and is legally obligated to serve all Americans at a uniform price and quality. However, it competes with companies like FEDEX for package delivery, like the one spoiling my photo of the lovely, brick Post Office, and it competes directly with e-mail. The U.S. Postal Service is financed not by taxes but by the stamps it sells.

The stamp I bought for my grand-niece's birthday card set me back a whole 50¢. That's still just one-half the cost of a stamp in Sweden. The U.S. Postal worker, who was dressed in the familiar blue-grey uniform they have always worn—at least as long as I can remember—asked me if I only wanted one stamp, looking slightly disappointed. I explained that U.S. stamps would not do me much good in Sweden, where I live. She understood. She actually knew where Sweden is, and was aware of the fact that it is not Switzerland. I felt like I could ask her to send a letter or package anywhere and it would be certain to arrive. I'm afraid I do not have the same confidence when I take my mail into the candy stores that have become our post offices in Sweden.1 I worry when my letter or package is nonchalantly flipped into a bin that could easily be mistaken for trash. And recent revelations that the privatized into the trash because they could not keep up with the sorting machine have done nothing to decrease my anxiety over what mail I have not received and which letters I have sent that never arrived.

Suddenly, everything is free

When I pressed the MS MAIL 'SEND' button for the first time twenty-five years ago, I guarantee you that I didn't think about the consequences for the postal services around the world. On that day, I am sure there was a sense of elation, that I didn't have to print my letter, fold it and stuff it into an envelope, buy a stamp, lick it and stick it on, write the receiver's address and my return address, walk to a mailbox and then wait days or weeks for a response. Whew! I have a vague memory of the euphoria I felt when I sent a large report as an attachment, rather than having to copy the document, replacing the toner, filling the paper bin and unblocking the inevitable paper blockage, taking the package to the Post Office, filling out the forms, addressing the large envelope and paying the postage. Double whew!!

Part of the elation and euphoria was the feeling that it was all free. It wasn't then, and it, isn't now. I pay around €150 per month for Internet access, but the majority of that is for sending and receiving mails, many with attachments, on my laptop, iPhone and iPad. Honestly folks, how many of us spent that much money sending letters, postcards or even packages twenty years ago? Raise your hands if you did. And to whom are we paying this money? Our Internet Service Providers (ISPs), that route information on networks built with mostly public money and on the Internet backbones that were all originally financed by governments.2

I believe our governments—and especially our postal services—made a major mistake when they didn't recognize that an e-mail was the same as a regular mail. Perhaps someone did notice, but was slapped down by the dot.com police with the declaration: "Information wants to be free."3 What if we had to put an electronic stamp on every e-mail we sent, and had to pay for every attachment, and these payments went to the Post Office, not ISPs or, indirectly via Google, Facebook and their like, to advertisers? I believe we would have an electronic mail service that was not overloaded with the same KPIs as the postal services had back in 1999 and some have even today, and, on top of all this, was self-financing.

Our governments have handed over the value of information transfer from the channels that had been built up with public money to perform these transfers (i.e., the USPS) to private individuals and private company shareholders. I can find no justifications that were performed to show that such transfers were in the public interest. Like Uber drivers simply showing up on the street and Uber daring city governments to prove they were illegal, mails started being sent without stamps and without even so much as a 'Thank you'. What remains of these channels, those still in public form or those that have been privatized, are experiencing difficult economic conditions as they continue to have the high costs of health and pension benefits for current and past employees, but have significantly reduced income from the sale of stamps.

Objectives, Consequences then Decisions

Now, it seems that some within the USPS feel that autonomous vehicles are going to save the day. In October, 2017, the Office of Inspector General (OIG) for the USPS4 produced a report titled Autonomous Vehicles for the Postal Service. In the opening of the report it states "research suggests that while there remain stumbling blocks to adoption, the impact to the Postal Service will potentially be significant if this promising technology gains traction." Nowhere in the 19-page report do the authors make the slightest attempt to describe the problems they might address with AV technology. They describe what it is and how it is supposed to work, list the same justifications that everyone else has given for adopting humanless-driven vehicles, such as increasing safety, reducing fuel consumption and increasing worker productivity.

The problem with the U.S. Postal Service and most of the world's other postal services is that their funding source was stolen from them, and while the alternative of using e-mail with attachments has been a major improvement in many ways, it lacks everything that the postal services have stood for: reliable and secure delivery of our thoughts for the price of a stamp.

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Footnotes:

1. The Swedish and Danish postal services are operated by PostNord AB which was established in 2009 through the merger of Post Danmark A/S and Posten AB. The parent company, PostNord AB, is a Swedish public limited company with headquarters in Solna, Sweden. PostNord is owned 40% by the Danish State and 60% by the Swedish State. Voting rights are shared 50/50 between the owners.

2. DARPA in 1973, U.S. National Science Foundation in 1986, and then many national governments and publicly-funded universities.

3. The phrase is attributed to Stewart Brand, founder of the Whole Earth Catalog in the late '60s. He argued that technology could be liberating rather than oppressing. The earliest recorded occurrence of the expression was at the first Hackers Conference in 1984 when Brand told Steve Wozniak, co-founder of Apple: "On the one hand information wants to be expensive, because it's so valuable. The right information in the right place just changes your life. On the other hand, information wants to be free, because the cost of getting it out is getting lower and lower all the time."

4. The OIG achieves its mission of helping maintain confidence in the postal system and improving the Postal Service's bottom line through independent audits and investigations. https://www.uspsoig.gov/sites/default/files/document-library-files/2017/RARC-WP-18-001.pdf

About Michael L. Sena

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. What drives him—why he does what he does—is his desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel efficient vehicles.

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.
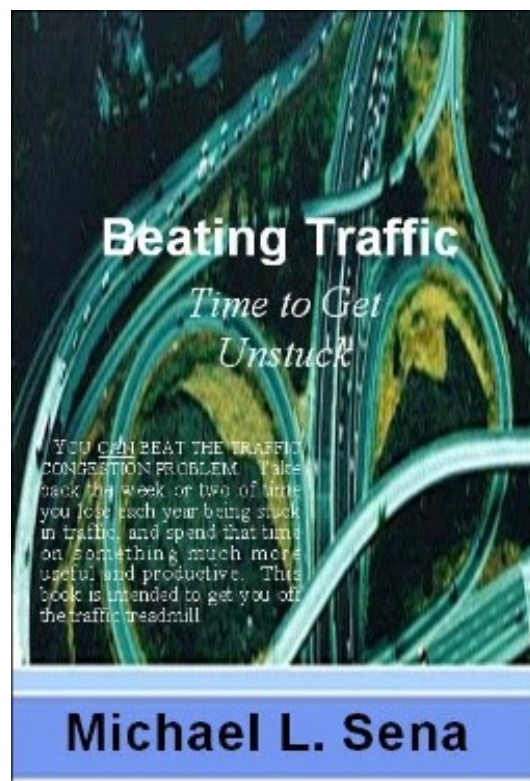
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