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The Dispatcher

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Elon Musk's personal Tesla Roadster, with a space-suited mannequin dubbed "Starman", are off to scout the solar system after being placed in orbit by the SpaceX Falcon Heavy rocket. On the car's head unit display are the words 'Don't Panic', taken from Douglas Adams' classic book and BBC series, [Hitchhiker's Guide to the Galaxy](#). I wonder if the Musketeer needed to get permission from the Intergalactic Transport Agency for putting a vehicle into orbit, and if he took out special intergalactic debris insurance.

Telematics Industry Insights by Michael L. Sena

GEAR 2030: Trying for a Smooth Shift

A POTENTIALLY IMPORTANT report was issued in October 2017 with the title: **Ensuring that Europe Has the Most Competitive, Innovative and Sustainable Automotive Industry of the 2030s and Beyond**. The report was the result of work performed during a two-year period by a group called GEAR 2030, organized by the European Commission, Directorate General Internal Market, Industry, Entrepreneurship and SMEs (DG-Growth). Members of what was designated as the GEAR 2030 High Level Group (HLG) on the Competitiveness and Sustainable Growth of the Automotive Industry in the European Union were only institutions, and members in the HLG were selected after their applications for membership were accepted. Work began in October 2015.

At a time when vehicle production and ownership is rapidly expanding in China and other Asian countries, certain cities and national governments in Europe, at the urging of environmental lobbies, are striving to reduce their citizens' dependence on road transport vehicles of all types. Increasing fuel prices, reducing parking availability and banning cars with internal combustion engines altogether are measures that have already gone into force in a number of European cities. It is worth being reminded, as the introduction to the **GEAR 2030 HLG Report** does in its introduction, that Europe's automotive sector "has long been key to the creation of jobs across Europe. Around 12 million Europeans work in the automotive sector or in mobility jobs in the EU."¹ The ACEA report states further that in 2016 alone, fiscal income from motor vehicles in fourteen EU members accounted for €395.7 billion, accounted for extra-EU exports of €135.4 billion in 2016 with a positive trade balance of €89.7 billion. This is not insignificant, and the EC wisely determined that the oftentimes conflicting goals of environmental sustainability and economic viability must be reconciled.

GEAR 2030 is first and foremost a forum where as many as possible of the principal parties engaged in the automotive business can meet and build consensus. Twelve of the twenty-eight EU countries were represented by their Ministers of Economy, Industry or Transport. There were seven industry associations, including ACEA (European Automobile Manufacturers' Association) and CLEPA (European Association of Automotive Suppliers), six representatives from trade unions, consumer groups (FIA) and environmental interests. ERTICO was also asked to participate as a member. It was decided that this HLG would focus on automobiles and leave two- and three-wheel vehicles and heavy duty vehicles for another time.

Three working groups were formed into the following focus areas:

- Adaptation of the EU automotive value chain;
- Highly automated and connected vehicles; and,
- Global competitiveness.

Dispatch Central Won by a Hair

The **ALLIANCE**, comprising Renault, Nissan and Mitsubishi, narrowly nudged out **VOLKSWAGEN GROUP** for the top spot in global new car sales for 2017. The **ALLIANCE** sold 10.61 million while **VW**, with VW, Audi, Skoda, Seat, Porsche, Bentley and Bugatti sold 10.53 million. **TOYOTA** was third this year with 10.2 million units. In 2016, VW was number one followed by Toyota and General Motors.

⌘

U.S. Recalls

According to figures compiled by Alix Partners, auto manufacturers and their suppliers paid out nearly \$11.8 billion in claims and accrued \$10.3 billion in warranty costs for U.S. recalls in 2016, with the \$22.1 billion total estimated to be 26% higher than in 2015. The report states further that since 2013, electronics-related recalls have grown six times faster than in prior years. One-half of the totals is related to GM's ignition switches and Takata's airbags, but even without these major blunders, the totals are still significantly higher than in previous years. What's going on? The report's authors suggest that some companies have prioritized sales volume, customer satisfaction and profit over quality. In other companies, quality-related activities took a major budget hit during the financial crisis and those budgets have never been reinstated.

As I reported in the March 2016 issue of **The Dispatcher**, 20% of recalled vehicles are never fixed. As recalls rise, so do the number of defective cars on the roads.

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Dispatch Central (cont.)

CRUNCH TIME

A TESLA MODEL S travelling at 65 mph in Autopilot mode has crashed into a parked fire truck on a California freeway, prompting safety concerns surrounding the electric car maker's self-driving technology. Investigators from the National Transportation Safety Board are investigating the accident, which took place on Monday, January 22, on Interstate 405. The fire truck had been parked with its light flashing in the emergency lane and carpool lane at the scene of a previous accident, according to Culver City Fire Department.



Pictures of the Tesla Model S, which crashed into a fire truck on the 405 freeway in California, were shared by the Culver City Firefighters. There was a minor dent and a broken light on the truck, but the Tesla was crunched big time.

MORE MUSK



Is this Elon Musk watching his clothes drying at a local laundromat? For the next ten years he is going to have to be saving his pennies. Unless his companies grow by leaps and bounds, he won't get a dime in compensation, according to his latest employment agreement. As a Tesla employee, California law dictates that Musk is paid minimum wage, though he doesn't cash the \$37,000 check he receives each year. "It just ends up accumulating in a Tesla bank account somewhere," he said. Musk won't need money on Mars, and after the successful test launch on February 6th of his SpaceX Falcon Heavy, now the most powerful rocket on the planet, his goal of travelling there by 2022 is looking more achievable.

Continued next page

GEAR 2030: Trying for a Smooth Shift (continued from p.1)

The Commission requested GEAR 2030 to assist in developing medium- and long-term recommendations to address the main challenges and opportunities for the European automotive industry leading up to 2030 and beyond.

"GEAR 2030 will analyse and discuss the key trends which will be affecting the automotive industry in the future and come up with jointly agreed roadmaps that should set objectives, specify milestones and clearly define responsibilities of different stakeholders. By providing a stakeholder forum for discussion and strategic advice, GEAR 2030 should help building consensus amongst the automotive community and assist the different departments of the Commission in developing policies for the EU automotive sector and its whole value chain. By its level of representation it should also help to build political support for the implementation of such policies."

It all sounds very good as an introduction. The report presents six pages of economic data to indicate that the market for cars within the EU is declining, although at a very low rate, and its car companies are investing more in R&D than its U.S. rivals to stay competitive. Then, without any lead-in, it states simply that "by 2030, the overall automotive industry landscape will have undergone significant changes which will affect the entire value chain." It then presents what it calls a scenario that is a "likely snapshot of the sector in 2030 on the basis of available studies and the best knowledge of the stakeholders." To summarize, the scenario is one in which connected and automated vehicles will be BEVs or HEVs, will generate a lot of data that will require 5G. Further, since China and India will be producing and selling many more cars in their markets than Europe's manufacturers will be selling in theirs, these countries will be much better placed to out-compete the European car industry, resulting in possible major job losses. So, the EU needs to step in and make major investments to keep its industry competitive and also retrain all of the out-of-work car employees.

The whole point of scenario analysis is to compare different scenarios based on different conditions. If you decide to choose one scenario, surely you must at least outline what the other scenarios are that you are rejecting and provide a very good reason for why they have been eliminated. There is not even a by-the-by on what else might happen in the intervening thirteen years that could alter the outcome.

What happens if a study finds that lithium batteries are a major health hazard? What if there is a significant breakthrough with fuel cells or some other zero emission technology? Much can happen in thirteen years, and choosing one scenario is simply not good practice. There are some good recommendations among the total of thirty-two in the report, but I just wish the majority of them didn't read like a jobs program for the Commission. Twenty-six out of thirty-two involve the EU/EC guiding and regulating, saying "Give us more money and power and we'll fix it all."

The good recommendations:

#8 – Development of large-scale open road testing and trials (although this should be led by industry and the member states, not the Commission).

#16 – Inclusion of societal challenges and social acceptance considerations in broader European visions and strategies on automated and connected vehicles.

#24 - Identification and definition of future human capital needs according to identified trends and potential scenarios.

The Report's final two recommendations under the sub-title *Mind-set and culture* are, unfortunately, typical of the 'high level' mindset of the EC. #31 states that the EU should become "the global standards setter to regain the trust in EU rules that was lost during the diesel scandal," and this can only be done, it states, "through close cooperation by the Commission, Member States and the industry." It was VW that cheated, and no one is blaming their behavior on the lack of rules set by the EU. The EC is using this to attempt to gain more control than it already has over 'industry'. #32 states that the (automotive) industry must support the "ambitious and realistic EU regulatory framework that facilitates technological development, is cost-effective in the long run and can credibly (sic) inspire regulatory developments outside the EU." I guess if you believe leveling huge fines on non-European firms that are leading global technological developments is the way to facilitate technological development, you can write this with a straight face.

Forcing developments and controlling the processes by which these developments occur by being the one handing out the money is a flawed model. Instead of being a guide for a smooth shift, this potentially promising report suffers from oversteering by the Commission.

The Depopulation and Concentration Cycle

EVERY CITY STARTS its life as a field or a forest. Then, a few houses are built and a village is born. Cows and sheep cut the first paths. In two of the cities in which I have lived and worked, London and Boston, traces of those first animal paths are retained in their street patterns. Eventually, the center of a city is covered with buildings in brick and stone and concrete and the negative space is used for movement. What is left open is park.

When cities like Detroit were in their heyday, the buildable space was full of buildings. Below is a 1940s photo of the headquarters of HUDSON MOTOR CAR COMPANY in Detroit. As Detroit deteriorated and depopulated in the second half of the twentieth century, its buildings were replaced by parking lots, as the second photo taken from the same spot in 2013 shows. Clicking on the link below the photos will show you more examples from Detroit.



<http://twistedifter.com/2015/06/historic-photos-of-detroit-and-their-modern-day-equivalent/>

I often hear city planner pretenders say that cities “need to get denser” and “we should take away all off-street surface parking lots”. Cities don’t “need” to do anything; they become more or less dense depending on the pre-conditions that exist for their growth or decline. Saying to Detroit that it needs to get denser is like saying to a homeless person who hasn’t had a decent meal in months: “You know, you look kind of thin. You should eat more.”

Some cities, like Boston and London in the recent past and Stockholm and Gothenburg today, had the good fortune to have the right people at the right time doing the right things to

create the pre-conditions for growth. The open parking lots that dotted downtown Boston when I arrived there in 1973 are long gone. Before they appeared, there were buildings occupying their spaces. Boston had a really rough spell between the early ‘50s and the late ‘70s, when the population dropped from 801,444 to 562,994. But that is now forgotten and the population is pushing 700,000. Stockholm has recently passed Copenhagen as the largest city in the Nordic countries, but it too had a period of stagnation and decline. The population of Stockholm declined from 808,600 in 1960 to 647,200 in 1980. Today it is 1.55 million, and if there is a large, surface parking lot somewhere in the city (I can’t think of one), it won’t be there for long.

A few years ago, during three very cold days in January, I was in downtown Detroit for a meeting of the ITS World Congress planning committee. The Congress would be held in June in Cobo Hall. Our meeting was taking place at a hotel in the Renaissance Center, which, since 1996, is also the headquarters of GENERAL MOTORS. As I looked out from my hotel window, high above the city and facing away from the river, I saw the carcass of a once proud and vital city. Parking lots had replaced many buildings, and most of the lots were less than half full. There was no congestion on the streets. I could see the *Detroit People Mover* snaking its way above the lifeless landscape. Riding it, as we did to get to the Hall and to our evening meals, we passed by one empty building after another. At its height in 1950, the population of Detroit was 1,849,568. Today it is 672,795.

The biggest problem cities have is tinkers, people who think they know how to fix something, even though it might not be broken. Detroit’s *People Mover* is a great example of a bad idea realized. Renaissance Center sucked the wind out of the rest of the city when it was opened in 1977, a vain attempt to stop the bleeding. Here’s a tinkering suggestion: “Successful cities have congestion charging, don’t they. We want Detroit to be successful, don’t we? Let’s start congestion charging in Detroit.”

What made Detroit successful in the first place was its strategic location along a major fur trading route and then as a nexus on the Great Lakes. Furs and iron ore will not make Detroit successful again. It will have to find a new reason for being. But as Boston and Stockholm have shown, there is hope for Detroit since hope does truly spring eternal.

Dispatch Central (cont.) **Wait, Wait. Don’t Tell Me!**

According to INRIX, the traffic information company, the name of the city in which its drivers spent 102 hours sitting in congestion during rush hour in 2017. (See Footnote 2 for answer.) If you guessed Moscow or New York (they were tied for second) you would have been off by one place and you need to take a run around the penalty track before continuing the race. INRIX has been publishing this list for several years and it’s always fun to see who ends up as the worst of the worst. London, at number seven, is the sorriest of Western European cities. When you reduce lanes for buses and bikes while making it a free-for-all for private limos (i.e. Uber, et al), in the prescient words of Uma Thurman in her Schweppes ad, “Hey, what did you expect?”

⌘ **DOTting the Ayes**

On March 1, after *The Dispatcher* has gone to press, the U.S. Department of Transportation (DOT) will host a summit on autonomous cars that will be attended by auto manufacturers, technology companies, road safety advocates, policy makers and the public. It will be hosted at DOT’s DC headquarters. The purpose of the summit is to help DOT’s National Highway Traffic Safety Administration (NHTSA) identify federal and non-federal priority activities “that can accelerate the safe rollout of autonomous vehicles.” The auto industry and technology companies are lobbying hard for revising guidelines and safety standards to allow cars without human drivers, while safety advocates are advising a go-slow approach.

⌘ **ITU-T Future Networked Car**

On March 8, in Geneva in connection with the Geneva Motor Show, the ITU/T will host its annual symposium on the Future Networked Car. Your Editor will be there and I hope to see as many of my readers who can make the journey.

<https://www.itu.int/en/fnc/2018/Page/default.aspx>

Edge Computing

A Disturbance in the Force

"I want to stand as close to the edge as I can without going over. Out on the edge you see all the kinds of things you can't see from the center."

KURT VONNEGUT

Mainframe, minicomputer, terminal, workstation, personal computer, client-server, wireless device, cloud: This is the evolution of general computing in a nutshell. It is a story of far and near and then far again. The automotive sector has had its own computer evolution: isolated electronic control units (ECUs), networked ECUs, autonomous navigation controller, wireless device and cloud-connected head unit. Both general and automotive computing are now part of a larger force, the Internet of Things, and in this larger framework we are now moving from very far away in the so-called cloud, back to where things are really happening, the EDGE, close to and in our intelligent devices.

Edge Computing refers to the computing infrastructure that exists close to the sources of data, says GE, the masters of smart, data collecting devices. You can't get much closer to the sources of data than a vehicle. Brian Krzanich, CEO of INTEL, says his engineers have estimated that a car equipped for highly automated driving, with all its sensors, radar, cameras and computing systems, will generate as much data as about three thousand people with their individual computers, phones and tablets, around 25 Gbytes per hour, or nearly 30 times more than a high definition video stream. "A million autonomous cars will generate three billion people's worth of data. It cannot all go back and forth to the big cloud."

Besides the obvious advantages of processing data in real time—assuming you have the computing power to do it, which companies like INTEL and NVIDIA are trying to ensure that we will—there is the matter of the cost of transferring, storing and processing data in those gigantic service centers being built by Amazon, Microsoft, Google and Alibaba. For them, a paradigm change to the edge is a threat, unless they can extend their reach and cover both bases better than individual edge players can do on their own. They are promoting an AI model in which the algorithms are trained with gargantuan amounts of data in the cloud, and then the algorithms are deployed on local (i.e., edge) devices for real-time operation. This is the model most applicable to highly automated vehicles.

Computer Power Where It's Needed Most

IT TOOK ME awhile to get comfortable with the idea of computing via the Internet (a.k.a. cloud computing). I started my computer life in the era of the IBM360 when computer rooms with washing machine-sized disks and humming mainframes were well hidden from the neophytes. The minicomputers I used for CADD and mapping were much more accessible and friendly, but after my first Apple II Plus I was sold on first-hand processing. The idea of using programs and storage that were somewhere else just did not compute. At the same time, I can appreciate the advantages over building one's own server halls or outsourcing the one's entire operation for a company trying to get up and running as quickly as possible, but when it comes to car computing, especially for mission-critical applications, the model feels flawed.

So I was intrigued when I saw a reference to the Automotive Edge Computing Consortium, billed as a "consortium for driving the network and computing infrastructure needs of automotive big data. It was announced and formed on 10 August 2017. Founding members include Denso Corporation, Ericsson, Intel Corporation, NTT, NTT Docomo, Toyota InfoTechnology and Toyota Motor Corporation.



What motivated the formation of AECC? Its members claim that the current forecasts for vehicle data volumes and data transfer capacity in the 2025 timeframe are grossly underestimated. "We estimate that the data traffic will reach 10 exabytes per month around 2025, approximately 10,000 times larger than the present volume." This means there will be a

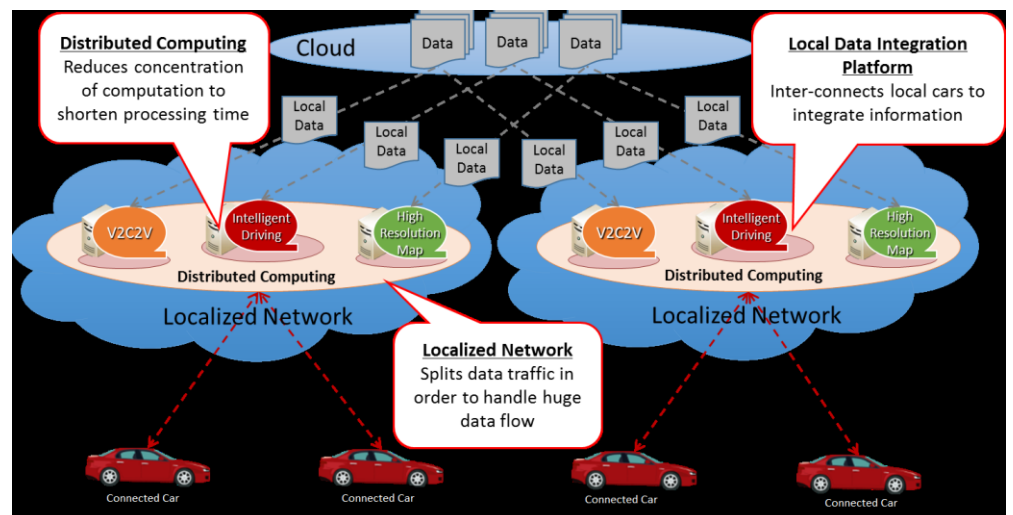
need for "new network architectures and computing infrastructure to support massive computing resources and topology-aware storage capacity in terms of balancing quality and cost." 3GPP has not fully addressed this challenge, they say. "We believe that the current mobile communications network architectures and conventional cloud computing systems are still not fully optimized to handle the requirements of connected vehicles effectively."

The Consortium's solution for addressing these problems is Distributed Computing on Localized Networks (see diagram below). The idea is to add localized networks in between the cloud and connected vehicles in order to be able to process local data more quickly and improve response times.

Where's the Edge?

The edge computing technology the Consortium intends to use for its concept consists of two components: the network and the computation resources. The network will be designed to split data traffic into what the Consortium says will be "localities that cover reasonable numbers of connected vehicles." The computation resources will be hierarchically distributed and layered in a "topology-aware fashion to accommodate localized data and allow large volume of data to be processed in a timely manner." The 'edge' means "the hierarchically distributed non-central clouds where computation resources are deployed, and the edge computing technology can be used to design such a flexible topology-aware cloud infrastructure." The vehicle itself is included as a 'non-central cloud' where resources are deployed.

I have quoted freely from the AECC's White Paper. It is worth a read. Download it from the Consortium's site: (www.aecc.org).



A Marketplace Platform for Mobility Services from HERE

DURING THE FOUR-AND-A-HALF years we were working on MOBiNET, one question arose every time we had a project gathering: Why hasn't someone done this already? The 'this' was a marketplace platform for mobility services. We were trying to address a problem that we felt needed solving, which was that the widespread deployment of ITS services is frustrated by the inherent complexity of the real world of mobility information and infrastructure, and that the solution to this problem lies in simplification. We were trying to eliminate the friction that is caused by every city, state and country, and every vehicle operator and mobility service provider operating their own services with their own, often proprietary systems. People just want to get from A to B, with maybe some Cs and Ds in between.

The MOBiNET concept included three key areas of innovation:

- A global multi-vendor business-to-business E-Marketplace where providers of transport-related content and services can publish and exchange their products, compose new services and reach a Europe-wide (and eventually global) customer base;
- A uniform middleware environment making each MOBiNET-enabled user device—including mobile, aftermarket-fit and factory-installed in-vehicle devices—accessible for any service provider, enabling transparent, intelligent connectivity management on the platform and offering an intelligent portal for consumers to have access to a wide range of user services; and,
- Tools for content and service providers to assist them in developing transport and mobility services that can be deployed with cross device interoperability, and can enable end users of these services to select among a wide range of services for drivers and non-drivers alike in any geographic area.

MOBiNET was finalized in June, 2017, and since then, nothing had appeared on the scene which attempted to meet its objectives—until very recently, and it is coming from an obvious source: HERE. More specifically, HERE MOBILITY. This is its mission statement: *To enable fair competition in an open market for true freedom of choice, empowering businesses and consumers with access and options. We aim to democratize the mobility ecosystem by building this competitive marketplace and closing the technological gaps among the different players.*

When I read this I had one comment: Exactly!

I had a call with Liad Itzak, VP and Head of Mobility at HERE. Liad worked at WAZE for six years before joining the HERE team a year ago to work on its mobility strategy. *"The mobility market, like most of the platform markets, are de facto monopolies within regions. Think Uber and Didi,"* commented Liad. He described the situation that all of us working in the MOBiNET Project had recognized, that it was nearly impossible for anyone except the dominant players to put their products and services in front of end users. The barriers are just too high. This limits consumer choice. *"HERE's mission is to turn the mobility services into a global, competitive marketplace, to enable fair competition and close the technological gaps among the different players."*

HERE MOBILITY is now a 150-person strong force, built up from scratch. The team has created a neutral platform than anyone can connect to and which provides capabilities for all types of enterprises, from the smallest to the largest, to put their data or services in front of both business and consumer end users. The idea is to provide all end users with a seamless experience, independent of the entry point and independent of the application.



Here Mobility was officially launched in January 2018 at CES in Las Vegas. Liad said that the concept was very well received, welcomed as a much-needed and long-awaited critical support pillar to offering widespread mobility services.

No one should be cheering louder for the success of HERE MOBILITY than the members of the MOBiNET Project Team who developed the use cases, created a working platform and promoted the concept in articles and presentations at conferences for the four plus years that the project was active. HERE MOBILITY may not cover all of those use cases, and there is plenty of scope for another MOBiNET-like platform to enter the scene to fill the gaps, but what I find most positive is that the first mobility marketplace platform is not being offered by one of the current 'titans' to bolster a non-mobility business model. Go HERE!

Drive Sweden

"It's not all about driverless vehicles. This is a completely new approach to mobility. We are on the threshold of a radical shift, and it's happening fast."

On February 1st, Drive Sweden held its Drive Sweden Forum and Annual General Meeting 2018 at Volvo Group headquarters in Gothenburg. The conference hall was filled with around 150 participants who had travelled to Sweden's motor city to hear what Drive Sweden's members have been doing and what they are planning to do in the coming year. The conference was well-organized from start to finish, the presentations were excellent and the presenters were inspiring. Here are a few.

Stefan Tilk, CEO of NEVS, gave us all some insights into what is happening with the company formed from the remains of Saab after it went into receivership in 2011 and Stefan had driven the seventy-five kilometers down from the company headquarters in Trollhättan to Göteborg in one of the company's new NEVS 9-3 EV. It was "a dream" he said, both because how it felt to drive the car and just the idea that after five long, hard years, their first electric car was now on the road. NEVS's partnership with DiDi Chuxing will be a key to its future success.

Mats Fägerhag, CEO of CEVT (China Euro Vehicle Technology AB) started with an overview of the Geely Holding Group, of which CEVT is a part. Geely has big plans for growth, and Sweden is an important focal point for advanced technology development. Since its founding in 2013 at Lindholmen, CEVT has grown to 2000 employees. It is a development center for Geely, Volvo and Lynk&Co cars, covering all aspects of passenger car development.



The new Geely Innovation Center is under construction at Lindholmen with room for 3,500. The first stage will open in 2020.

In this video, your Editor, among others, gives you a first-hand view of what was happening at the Drive Sweden event:

https://youtu.be/cZlX_VJHb4s

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Footnotes:

1. According to the ACEA Pocket Guide 2017-2018 based on Eurostat figures, around 3.3 million people work in the manufacturing of motor vehicles and components, more than 4.3 million people are employed in the wider 'Automobile Use' (dealers, repairers and aftermarket service providers), and more than 5 million are mobility jobs related through transport and road construction activities. Furthermore, according to European Motorcycles Manufacturers Association (ACEM) Industry Report (2015) the L-category industry is estimated to support about 22600 jobs in manufacturing in the EU. The upstream and downstream L-category sectors account for about 133700 jobs.

2. Los Angeles

3. UK Road Safety Marking Association. *White Lines Save Lives*. (April 2007)

Musings of a Dispatcher: Red Herrings

A RED HERRING is something that is said or written that misleads the listener or distracts the reader from the main issue. It is believed that the term refers to a 'kipper', which is a smoked herring (a fish) that turns red when smoked and has a pungent odor. As the story goes, hunting hound trainers laid the kippers along a trail to divert their young canines from the true scent of the prey. In other words, if it smells 'fishy', it is probably false. A red herring is intended to lead the audience to a false conclusion. Here's one: "The main cause of road traffic accidents is the driver of the vehicle. People are just not made to drive cars." The red herring is pushing the crowd toward humanless-driven cars, but diverting the focus from the main issue, which is road traffic accidents, which have many causes.

I read this statement in a BBC NEWS article, titled *Will we ever be able to trust driverless cars?* I was actually annoyed by the inference that humans lack the proper skills to operate their own invention. I understand that human-bashing in general, and man-bashing in particular, are *de rigueur* at the moment, but as both a human and a man, I don't have to like it.

The number of traffic related accidents has been falling steadily for many years in most countries due to improvements in the vehicles, the roads, driver behavior and stricter laws, especially regarding driving under the influence. For example, a record low number of people died in road traffic related

mishaps in Sweden during 2017. The number was 254, 16 fewer than last year and the lowest in over 70 years. This happened without artificial general intelligence (AGI), deep learning, Nvidia or Waymo. At this rate, there will be no deaths on Sweden's roads by 2034. If you think that is not doable, keep in mind that there were zero passenger deaths on commercial airlines in 2017. Zero!

An example of using a red herring to turn this fact about lower traffic deaths in Sweden into a misleading statement is as follows: "In 2017, 254 people died in road traffic accidents. During the same time, 1,100 people in Sweden took their own lives. People are better in Sweden at driving cars than at deciding whether to commit suicide." There is no connection between driving a car and committing suicide in Sweden or anywhere else, except for those who are among the ones who die in a car crash that they caused intentionally in order to take their own lives.

Here's another: "As many people in the U.S. died in 2016 by drug overdosing (64,070) than the total number of American soldiers who died in the Vietnam War (58,200). People can't handle all the freedom and free time we give them."

The number of traffic-related deaths in the U.S in 2016 was 40,200, a 7% rise from 2015. After falling for many years, the number of traffic-related deaths has risen for two years. This has added more fuel to the flame for

removing humans from the position of driver. Companies and governments (e.g. DARPA) are investing billions in developing systems that will drive vehicles without the presence of a human driver. But who is investing in substituting robots for humans who are dying from overdoses? Imagine if you could ply a robot with opioids instead of stuffing them down your own gullet and get the same reaction vicariously. You live, the robot plays dead and those who can actually feel the sensation of happiness—including the human opioid-taker—are happier for the experience and can live another day.

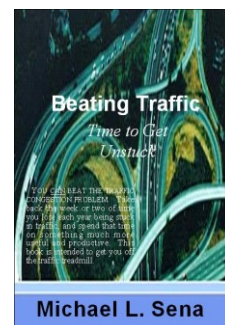
Here is another red herring: "Research at all levels, from local authority level to a national and international level, indicates that the rates of return from road safety schemes involving improved road markings lead to a safer travelling environment for road users. Let's add better road markings so that new on-vehicle sensors can more easily keep the car in lane and see road signs."³

Forget on-vehicle sensors and aids for humanless driving. I and all the other drivers on the road **today**, both men and women, who are using our own jeepers peepers, need those better markings **now**. My drive in mid-January into Sweden's snowbelt in a snowstorm would have been infinitely safer with better road markings and signs. I was driving north and the snow was blowing from the south, completely covering all the signs. How about working on a solution for that conundrum. Now would be good.

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.



Download your copy of Beating Traffic by visiting
www.michaellsena.com/books