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The Dispatcher

Telematics Industry Insights by Michael L. Sena

Report from Telematics Update Munich

Attendance was up 20% from last year, to over 800, and more than one-half of the delegates to this year's Telematics Update Munich event had never attended an earlier TU Munich conference. Were the 300 or so who did not come back convinced that telematics would never take off, or did they feel they had gotten as much as they needed and were now ready to take on the world? Whatever the reason, they missed the best exhibition ever and a solid set of sessions. Panels and individual presentations were no longer PowerPoint future scenarios but case studies in what has been and is being done in Europe and, to a lesser extent, in the US and China. Why not Japan, where wireless, in-vehicle services have existed longer than in any other market? As long as European and American car manufacturers are not able to sell their cars as freely there as in other world markets, including China, Japan, will continue to be an isolated market for telematics.

Call Center Services Absent from the Conference

It has been many years since a telematics call center service provider was exhibiting or speaking at this event. A few years ago, AutoLocator, a Moscow-based call center for stolen vehicle tracking, who also provide the customer service center for Volvo On Call in Russia, famously—and shamelessly—served Russian vodka in company labeled shot glasses poured by gorgeous women. The booth was heavily visited. The ARC clubs and Mondial/Allianz

It is essential to understand the dynamics of these conferences to appreciate why certain issues are discussed and given importance and why others are apparently ignored. Speakers come principally from the sponsors, with the Platinum sponsors having the choicest speaking spots. Second, the OEMs are kings, invited to speak and given free entry just to make sure that they attend. Industry experts fill in the cracks.

talked with the BMW owners and delivered the all important assistance services, like concierge, roadside assistance and emergency help in case of an accident. Who was there? AutoLocator continues to attend, along with Cesar Satellite its major and larger competitor in Russia. Europ Assistance Italia was there, the roadside assistance provider to BMW and forever after-ran in the telematics call center races.

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THE FIRST ISSUE of **THE DISPATCHER** was published on 17 November 2013. At the time, Google had already been working on its driverless car effort for three years, and it would introduce its first prototype in May of the following year. Breathless journalists poured out the predictions of when the first cars would be rolling down a street near you, and investors opened up their wallets to fund every startup that had the vaguest connection to the DARPA Challenges. My boat had been roughed up during the dot.com storm, and I had managed to stay afloat during the period when 'telematics' was a T-word. I felt that there needed to be a voice urging caution to those who were ready to jump head first into a pool that might not have more than a few inches of water. That, in a nutshell, is why I started writing **THE DISPATCHER**. Over these past six years, both the content and format of the newspaper have changed. It started as a six-page tabloid that was made to be printed and read while waiting for a plane or over breakfast. The articles were brief snapshots of what was happening in the automotive and related industries. Today, the format is adapted to reading on a digital screen and the articles are more anal-

ysis than news. I have seen some positive signs. The not-so-breathless journalists are making fewer predictions about driverless cars and the world economy is forcing car companies to focus on what business they are really in. While I have no illusions that this has the slightest thing to do with what I have written, I can feel a bit better about being more in the mainstream than in a wadi.

Is This the End of the International Motor Show?

1. Mark Twain was the pen name of Samuel Langhorne Clemens, an 18th century American author, humorist, lecturer, inventor and entrepreneur. While he apparently never actually said the following words, they have become part of his legend: “Reports of my death have been greatly exaggerated.” What he did say was: “Reports of my illness were the result of his illness.” The “his” refers to a cousin, who was ill and for some reason that became news.

PARAPHRASING MARK TWAIN, pronouncements of the death of the international motor show are premature—but might soon have merit.¹ At least in Europe and North America, they will probably fade away; those that remain will have to adapt to changing conditions. At least that is the consensus among the readers of THE DISPATCHER who responded to my straw poll.

While the *International Motor Show Germany (Internationale Automobil-Ausstellung – IAA)* was still going on in Frankfurt, an article appeared in one of the major Swedish newspapers, DAGENS NYHETER (DN), written by the new editor of the *Motor* section, Jonas Fröberg. The article was titled “*Mässan i Frankfurt förbådar bilsalongernas död*” (*The Frankfurt fair portends the death of the motor show*). Quite a prediction, I thought. Jonas had written in an article on the opening press day of the IAA, 10 September, that he has been covering the *Frankfurt Motor Show* since 2007, so he has seven shows under his belt. He came over from the competing Swedish newspaper, SVENSKA DAGBLADET, where he had worked since 2006, and where among other subjects, he reported on the automotive industry.

For many years, beginning in the early 1990s when I worked for AB VOLVO, I attended the Paris and Frankfurt

motor shows, each of which occurs every other year, with infrequent stops in Geneva. Since 2016, I have attended only the *Geneva International Motor Show* while taking part in the *ITU/UNECE Symposium on The Future Networked Car*. I have to admit, I have never been a fan of the super big motor shows in Paris, Frankfurt and Detroit.

Besides wearing out a pair of shoe soles walking the exhibit floors, there are those well-known problems of



finding suitable accommodations and then their cost (usually three-to-four times normal, or higher). Geneva, for me, is about the right size, even if I have to stay in Lausanne to find an affordable room. But many of my colleagues and clients would not think of missing the ‘majors’, even if their companies have decided not to exhibit.

So, why are we now talking about the end of the motor show? I suppose it is in line with discussing the end of car ownership, the end of driving and the beginning of being chauffeured anywhere and at any time you want or need to move. It is sooo 1950s to be interested in cars. Attendance at the motor shows has been falling in recent years, as has the level of participation by the car companies.² At the 2017 Frankfurt show, cars filled seven of the eleven halls. At this year’s show, they filled only four. OEMs that were no-shows included Toyota, Suzuki, Nissan, Renault, Mitsubishi, PSA, Kia, GM, FCA, Bentley, Rolls-Royce, Ferrari, Aston Martin, Tesla and Volvo (although Polestar was there). Mercedes-Benz/AMG/Smart had down-sized and BMW occupied only a quarter of the space it had in 2017. Something is obviously happening.

After reading the DN article, I decided it would be a good opportunity to turn to my readers for their thoughts rather than simply responding with my own. I sent an e-mail to all the recipients of THE DISPATCHER asking for their views in a straw poll with the question: ***Is the day of the big international motor shows like Paris, Frankfurt, Detroit, Tokyo and Shanghai over, or will they live on, perhaps in another form?*** Thirty percent of those on the mailing list responded. Around one-half of those who did reply had been, or were still at, the 2019 Frankfurt Motor Show. Here is a sampling of what they said.³



2. The Frankfurt motor show ended on the 24th of September with about 560,000 visitors. This is a drop of 30% attendance compared to 2017, when 810,000 showed up, and 40% down from 2015 when there were 932,000 attending.

3. The responses included are from those readers who agreed to allow me to quote them. I received responses from other readers who requested that I not quote them, but I have included their opinions on the future of the motor show in my overall evaluation. This photo was taken by one of the readers of THE DISPATCHER. It shows the crowd listening to the Mercedes-Benz press conference.

THE DISPATCHER's readers responded

It turns out that the subject touched a nerve. Based on the responses, people have been thinking hard about this and what is happening in general in the industry, and they are forming opinions about where it is headed. There is not unanimity. We see that by looking at what each of the OEMs is doing. Some are increasing their efforts to sell their traditional vehicles, while others are trying to totally reposition themselves. Motor shows have been a very important part of the automotive industry, but they too have evolved with changing times. It was not all that long ago that skimpily-clad women disappeared from the stands of most auto shows. Shanghai made that change official in 2015. Let's see what the readers had to say.

"Clearly there is a crisis with the traditional concept of those motor shows, but I am assuming it will take a while before they will disappear completely. Detroit is going for a big evolution, Paris is also trying to change and Frankfurt will have to. We have not seen that much of a change at Beijing/Shanghai. Geneva seems the most stable one somehow.

"There are plenty of issues with current motor shows, the very high costs are one problem but it's also the level of experience that is just not quite there."

Alessio Ballatore, SBD

"This discussion was definitely on among my connections at IAA. My personal view on this: Paris and Frankfurt will stop soon. In Europe, the survival show will be Geneva. All OEM Execs are challenging their team on the RoI for attending or having a booth. BMW booth was a third of what it was 2 years ago at IAA. Audi does not have any more outside track. Daimler reduces also significantly. Some Chinese OEMs use that the space instead but still, during the first press day, IAA looked like a ghost town to me compared to the shows I attended 20 years ago.

"So where OEMs will be? Well, for sure the usual CES, but also all new conferences and shows related to Green eco mobility as a service etc.."

Julien Masson, CLOUDCAR

“As an industry analyst, consultant and journalist I have always been put off by auto shows because they are more about obfuscation than revelation. Car companies feel that if they don’t have anything new to talk about or share and can’t manipulate and manage the coverage they don’t want to attend. Also, typically, you can’t find knowledgeable executives in attendance capable of answering real questions regarding strategy, supply chain, marketing objectives, etc.

“We are at a turning point, though, and as car companies abandon their stands they will be replaced by mobility companies ranging from autonomous vehicle operators to micromobility startups and maybe even mass transit suppliers. The shows will change and move forward with or without the car companies. The situation in Europe, by the way, is unique given the comprehensive availability of automobile alternatives including mass transit, taxis and micromobility offerings – and, increasingly, autonomous vehicles. This matrix of mobility does undermine the traditional auto trade show mentality.”

Roger Lanctot, STRATEGY ANALYTICS

“None of this is surprising—it is just ironic—that even though the automobile industry has begun to reduce its negative environmental footprint, improve its safety record, and offer new forms of mobility, it can’t find a way to theme automobile shows to emphasize these in a way that would appeal to a broader audience.

“It is also unfortunate that the environmental community can’t find a more creative way to encourage the automobile industry in these trends and themes for auto shows, rather than just blocking them out.”

Stephen Lockwood

“Perhaps to survive, the auto show will have to evolve to become the mobility show. CES is a proxy for how auto shows need to evolve to stay relevant. CES is capturing the big announcements and buzz that the Detroit Auto Show would normally have. Part of CES success is that its focus is more on the overall customer experience of mobility (as opposed to the car).”

Ken Pyle, VIODI

“I really think that time is not over but in the current format of automotive shows it is. There has to be adaptation based on the

new generation. Few years ago when Volvo Cars announced to participate only three shows globally, many said it was a shocking news. I think that the only shock for the industry was that they started to fear that this development will grow. I'm pretty sure that quite many OEMs were thinking the same for years but did not want to be the first breaking the rule.

Somehow this direction feels healthy for the whole industry and is very natural if we look at what else is happening in the automotive, services, value chains and mega trends like electrification. There seems to very few areas remaining unchanged and there has not been any major clear-out in decades in these great shows, so maybe it is time for one. However, it would be very sad if there would not be any in the future."

Matti Seimola, HERE

"The auto shows are the hype ...bit like "Academy Awards". Energy efficiency is Paramount."

Matthew C. Long, VOLVO OF PRINCETON

"There can be no doubt that the technology and social execution of automobility is changing. The problem your question comes up against is that we're not sure how this change will roll out or how long it will take. Many of us have opinions, but there is no reliable consensus.

"The need for physical vehicles including vehicles for two to six people will not abate. But their format, motive power, and use-intention will change. We can likely project something about motive power, but less about format and use intention. Maybe there will be fewer vehicles registered at a given time, and maybe the ones registered will have less trim and last fewer calendar months (but more miles?), but motorized vehicles are here for a long time still.

"What this means, in my opinion, is that the draw of sexy, sleek, hot cars that have attracted many who cannot afford them but still account for a hefty portion of the gate for these shows will fall off. Few people currently come to shows to see EVs, fewer yet for (real) AVs sedans and scant few for automated taxis and shuttles. That will evolve considerably over the coming decade.

"As the love for raw automotive power and sexy trim fades in the face of congestion, declining affordability, shifts to active transportation, demographic shifts (millennials up boomers down) and

even (to a lesser extent) begrudging concern for our grandchildren's planet, these shows have to change in order to make money and sell what will become viable.

"The fact that a few Big Auto companies stay away is good news to me, sending a shivering message to companies and consumers that are not really paying attention. Bravo to GM and Toyota.

"After a dip (3-5 + years?) auto shows will return strongly, but as the Mobility show. This is a positive development for mobility including personal mobility. In the end, the 2030 Mobility show will have 30% of the 2015 players and 70% new ones. The relative scales and income of the "old" 30% will change as well."

Bern Grush, HARMONIZE MOBILITY

"Death of ICE motor show – likely, Death of Automotive shows – Not likely! I think that the automotive industry has underestimated the effect of electrification in the ACE race, most of them have for many years been focusing on Autonomous, a logical step for them... do what we do better, it is an engineering challenge. (Connectivity has been on the table for almost 20 years so it is now quite mature.) But most companies have not been investing in electrification; there been small-scale trials, but large-scale changes.

"What we now see is that the automotive industry is completely off-track compared with customer expectations. You are constantly compared with a Tesla, in range, charging speed, maybe price... but not quality, features, drivability, etc. So why go to a show when you only will be compared to the barbarian at the gate. Automotive industry is all about – compare well, reduce risk, reduce price.... here all new models will fail on all 3 measures. So you avoid being on the show, reduce the free ad for the barbarian.

"The industry will most likely be back in a year or two. It is likely that the shows then will have shrunk to hall-size stands to some a more sensible size. We all see the value in meeting, understand competition, talk with fellows and compare, reduce risk and find ways to reduce price."

Fredrik Callenryd, SCANIA

"These are tumultuous times for the industry and the appeal of auto shows is clearly in decline. It seems like another victim of our times - air pollution demonstrations, cars undergoing adjustments

remotely (threatening dealership repair shops), charging station sites growing in number, SUV's and trucks continuing to dominate sales in the US, electric vehicles sales growing outside US What's next?"

Tom Crosby

"I went to all of these in the past but stopped going because no real content, people are not as open as they are when you meet them directly, cost and time spent ... maybe younger/newer people may find it good/practical as you can see most of the ecosystem in one place and time, but this argument is no longer valid for me."

Jacques Amselem, ALLIANZ

"Sure seems like there is a major scale-back. What once was the buzz...power, speed, irresponsible usage...is now toxic. Maybe CES becomes the "motor show" since the car's "motor" is no longer the sales teaser, but instead "computer gizmos"?"

Alain L. Kornhauser, PRINCETON UNIVERSITY

Motor shows are trade fairs, no more, no less

A trade fair (also called a trade show, trade exhibition, or expo) is a "massive, stage-set, and usually regular trade event at which a large number of manufacturers from a particular industry present their products and show their capabilities to distributors, wholesalers, retailers, and end-users. Some trade fairs attract participants and visitors from all over the world and provide widespread interactions and exposure."⁴

In contrast to consumer fairs, only some trade fairs are open to the public, while others can only be attended by company representatives and members of the press. Therefore, trade shows are classified as either "public" or "trade only". A few fairs are hybrids of the two, and the motor shows fit into this category. There are a few days at the start of the motor shows that are reserved for the press, and then the public is invited while the business meetings take place inside and out of the halls.

While trade fairs can trace their roots back to the first time crafts people displayed their wares in public, the modern trade fair began at the end of the First Industrial Revolution, around the middle of the 19th century, with the international exhibitions. If you watched the British TV series **Victoria**, with Jenna Coleman as Queen Victoria and Tom Hughes as her husband, Prince Albert,

4. Business Dictionary.
<http://www.businessdictionary.com/definition/trade-fair.html>



you saw the drama surrounding the first great international exhibition, held 1 to 15 October 1851 at Crystal Palace (pictured left). Its full title was *The Great Exhibition of the Works of Industry of all Nations*. It was the first “World’s Fair”. It was organized

by Prince Albert and members of the Royal Society for the Encouragement of Arts, Manufacturers and Commerce as a “celebration of modern industrial technology and design.” The Prince was determined to outdo the French and their *French Industrial Expositions*.⁵

The British exhibition was housed in what was to be a temporary cast-iron and plate-glass building that was itself a tribute to British technological ingenuity. It covered 990,000 square feet (92,000 m²) providing space for 14,000 exhibitors from twenty-five countries. The exhibition was a huge success, generating a profit of the equivalent of £18.4 million in today’s money, enough to found the Victoria and Albert Museum, the Science Museum and the Natural History Museum. Every trade fair since then has tried to emulate that success.

The history of the *International Motor Show Germany* dates back to 1897. The first show took place at the Hotel Bristol in Berlin. Eight vehicles were on display at that time. By the time the 1930s arrived, the show was already very popular. Around 300,000 attended with up to 100 cars on display. By 1939, there were 825,000 visitors with the VW *Beetle* being shown for the first time. After WWII, in 1947 to 1949, the show was held in Hanover with passenger cars and commercial vehicles included at the same venue. The show moved to Frankfurt in 1951. In 1991, only passenger cars were shown because there was just not enough space to show both passenger cars and commercial vehicles in the Frankfurt facility—in spite of its huge size. A commercial vehicles show opened the following year in Hanover, and the shows have been held in alternating years ever since.

In 1976, it was decided by the *Paris Motor Show* organizers to make their motor show a biannual event, occurring in the years

5. In fact, he simply spurred the French on to make their expositions bigger, better and global, with 1889 and its Eiffel Tower as the crowning achievement.

At its height in 1989 to 2003, the International Motor Show Germany in Frankfurt occupied 12 buildings and was spread over 200,000 square meters. It featured around 2000 exhibitors from about 40 countries. Over 50 passenger car brands from Europe, the US, and Asia were presented. It attracted over one million visitors. “Visitors can witness first-hand the latest innovations, the newest cars, and technologies ensuring the future of mobility.” Special classic car exhibitions (IAA Heritage and IAA Masterpieces) showcased unique vehicles that one would not see anywhere else. The IAA Conference is dedicated to visions of future transport and mobility. The Show attracted CEOs of the leading car producers in the world.

that the German commercial motor show was being held. That is why Paris is held during even years and Frankfurt during the odd ones. Attendance at both shows seemed to be a given, but in 2016, Ford, Aston Martin, Volvo, Lamborghini and Rolls-Royce pulled out just a month before the opening. In 2017, Peugeot, FCA, Nissan, Infiniti, Volvo and Mitsubishi were absent. It looked like a trend was forming.

Maybe the medium is delivering the wrong message

Marshall McLuhan coined the phrase, “The medium is the message” in his 1964 book, Understanding Media: The Extensions of Man. The ‘medium’ is the channel through which the ‘message’ is transmitted. McLuhan argued that the medium is more important than the meaning or content of the message. He said that the “medium itself, not the content it carries, should be the focus of study since it affects the society in which it plays a role not only by the content it delivers over the medium, but also by the characteristic of the medium itself.” He said that the medium itself “shaped and controlled the scale and form of human association and action.”

The large, international motor show is the medium where OEMs have, for decades, delivered the message of their new car models. The thousands of demonstrators on bicycles, on foot and hanging from light posts carrying banners calling for a “climate-friendly transport revolution” and a ban on SUVs, were not interested in the fact that the main message inside the halls of the *Frankfurt Motor Show* was about zero emissions vehicles. The motor show for them represented what the transport industry had been twenty or more years ago, but also the emissions cheating for which the German companies in particular had been responsible. When the Greenpeace activists stormed the stage as German Chancellor Angela Merkel was officially opening the show, they were using the medium of the motor show to deliver their own message (see sidebar).

An obviously frustrated Bernhard Mattes, chairman of the German car lobby VDA (VERBAND DER AUTOMOBILINDUSTRIE) who organizes the Frankfurt Motor Show, announced his resignation the day the show opened. He gave no official reason for his decision, but the hostility shown toward the show by protesters and the lack of full support from the automobile industry to participate, must have been the principal factors. He indicated that there was no commitment to return to Frankfurt in two years, and he hinted that there would be further changes wherever the show is held



I wonder how many of these kids' parents work at Opel in Rüsselsheim near Frankfurt. If your future is living in a tree house, you won't need a car or any other type of transport.

in the future. “It is not about how many cars, how many visitors, how many square meters. First we have to agree on a fresh concept, then decide in which city to display the best,” he said.

Executives at Germany’s OEMs may feel that the increase in political and social hostility towards the industry is unfair, especially since they have accelerated their companies’ efforts to build and sell more electric cars. Porsche’s chief executive, Oliver Blume, whose company used Frankfurt to showcase its first battery-powered sports car, the *Taycan*, said that while the car industry was “part of the problem, it is also part of the solution”. He added: “It’s just the beginning, but electrification provides many opportunities for the future.”

Have the newspaper sharks caught the scent of blood

The NEW YORK TIMES is the editorial model for our major Swedish newspaper. On the 13th of September the TIMES carried a story with the byline: *The Concept Cars Gleam, but Executive Dread Clouds the Frankfurt Auto Show*. The article opened thusly: “Car executives are paid to be optimists, but behind the pomp and salesmanship at the *Frankfurt International Motor Show* this week lurked an unmistakable sense of angst.” There was not a single line in the article that delivered even a modestly positive view. “There will be a shakeout, there will have to be mergers but no one wants to merge, cars will have to be electric but there is no way to know when and if people will buy them and whether the car makers can make money with electric cars. The winners will be the battery makers, who are based in Asia.”

What’s the motivation for the newspapers to write so negatively about the car industry and its biggest annual show, especially when they take so much money in advertising from all of the automobile OEMs? The answer is simple: They have taken an editorial position against cars for environmental reasons. Note: They have not taken a position against harmful emissions from all sources, particularly from energy production and especially not against the major polluter, China. They have singled out cars as the major problem and are driving (forgive the pun) home their message.⁶ In the same issue of DN in which the article appeared on the demise of the motor show, the lead editorial written by the Editor in Chief, essentially dismissed the automobile as a future mode of travel, except for those that were driven by robots and operated by Uber and Lyft, and declared electric scooters as the future of mobility. I wonder if the scooter companies will make up for the advert income shortfall from the car industry.

Changes to the international auto shows have already begun. Detroit has moved its traditional date in January—to be first in the year—from January to June. It is mainly because January in Detroit can be freezing cold. Tokyo, held in October/November is in for a major overhaul. The Japan Automobile Manufacturing Association, chaired by Akio Toyoda, is aiming for a million visitors to this year’s Future Expo 2019, which is billed as a Disneyland for mobility.

6. The car industry can take part of the blame for this situation because of the emissions cheating, but mostly because it has allowed journalists and the newspapers for whom they work, to steer the debate solely toward climate issues and specifically toward cities, rather than toward the fact that cars and trucks themselves, and the companies that have produced them, have contributed immensely to increasing wealth and well-being for developed countries as a whole during the past 100 years, and are a major contributor to the expansion of China and other formerly extremely poor countries. The car industry has not created its own medium, its own channel to the public, and is therefore at the mercy of those who control such channels.



The Hotel California Parking Lot

HOTEL CALIFORNIA is an *Eagles* song from 1977. It could be the theme song for a public parking garage in Stockholm with the name *P-Snurran* (Parking Carousel).

*You can check out any time you like,
But you can never leave!"*

The garage was completed in 2003 and was unique at the time for its automated parking system developed by an Italian company. With a modest footprint, the circular-formed garage has space for 46 cars stacked on four levels, two above and two below grade. Owners drive their cars into the center of the carousel, lock them and leave the building. The automated system does the rest. An elevator takes the car to a floor where there is an empty space and then guides it into its slot. When the owner returns, the process is performed in reverse.

At the end of July 2019, the City of Stockholm experienced an electrical outage which resulted in *P-Carousel's* mechanisms being damaged, apparently beyond repair. After two months of trying to fix them and allow the eighteen car owners to retrieve their trapped vehicles, the City of Stockholm took the drastic decision to break down the walls and lift the vehicles out with a crane. After the rescue, the garage will be demolished, according to the head of *Stockholm parking*, the city-owned organization responsible for all parking-related matters in Stockholm.

"We aren't going to build any more carousels of this type in the future. Maybe we'll build a mechanical garage, but next time we'll choose a more established technology," said Christian Rockberger, managing director for *Stockholms parking*. I suppose one could question why the city chose the supplier in the first place if its product was not based on an "established technology", but it was a different political constellation running the city back then. The current city government has just chosen one Chinese company to build an extension to its underground system and another Chinese company to deliver the rolling stock. The other bidders, all European, claim both Chinese company low-balled their bids. The city says it is saving taxpayers' money. I guess we'll know the result in thirty years.

Who Was Richard Trevithick?

RICHARD TREVITHICK was a British inventor and mining engineer born in Cornwall, England in 1771. At that time, Cornwall was a center of coal mining, and his father was a miner. One of the family's neighbors was William Murdoch, inventor of the oscillating cylinder steam engine as well as a form of gas lighting. He had only a basic education when he went to work in the mines at the age of nineteen. By the time he was twenty-six, he was a full-fledged engineer and developed the first high-pressure steam engine.

In 1801, Trevithick built a steam road locomotive, which he named the *Puffing Devil* (see sidebar). It is acknowledged as the first demonstration of transportation powered by steam. It had limited range due to its inability to maintain sufficient steam pressure for long enough periods of time to travel more than several hundred yards. In 1803, Trevithick built another steam-powered road vehicle which he called the London Steam Carriage. It was apparently uncomfortable for passengers and more expensive to operate than a horse-drawn carriage, so it was abandoned.

Trevithick built a steam rail locomotive in 1803 based on a high-pressure stationary steam engine used to drive a hammer at an iron works. This locomotive travelled along a ten-mile course hauling ten tons of iron in five wagons along with seventy men. It was the first demonstration of the heavy hauling power of a steam engine. He built one more steam engine then turned his skills to improving on the steam engines for drainage purposes.

None of Trevithick's brilliant inventions were commercialized. He died penniless in 1833 of pneumonia, aged 62. There were no relatives or friends at his side, and he was buried in an unmarked grave. It wasn't until 1932 that a first memorial was raised to his achievements. A statue of Trevithick holding one of his small-scale models was placed in the center of Camborne, Cornwall, dedicated by Prince George, Duke of Kent.

What WEWORK Has to do With Driverless Cars

MR. SON SEEMS to have a soft spot for charismatic leaders. Masayoshi Son (孫正義 *Son Masayoshi*, born August 11, 1957, called 'Masa' by his friends and co-workers) is a Japanese billionaire businessman. He serves as chairman and CEO of Japanese holding company SOFTBANK, CEO of SOFTBANK MOBILE and chairman of UK-based ARM HOLDINGS. He is also one of the three members of the *SoftBank Vision Fund* investment committee.



This is an 1816 portrait of Richard Trevithick by John Linnell which hangs in the Science Museum in London. It is the same Science Museum founded with profits from the Great Exhibition held in 1851.



This is a replica of Trevithick's Puffing Devil, built by the Trevithick Society in Cornwall. It is arguably the first operational automobile. While French Army Captain Nicolas-Joseph Cugnot in 1770 built the first full-size working self-propelled mechanical land vehicle, also driven by a steam engine, the three-wheeled vehicle was very unstable and its engine was not up to the task of propelling the 2.5 ton contraption.

With his *Vision Fund*, it has been Son's goal to direct the course of history by making big investments in companies that he believes can potentially change the world. UBER was one of his choices, along with NVIDIA, DIDI CHUXING, GM CRUISE and a non-automotive company called Wework (officially called THE WE COMPANY). The *Vision Fund* looks for start-up companies with dynamic founders that can apply Son's framework for making fast and decisive impacts on their market by spending lots of money to acquire customers, hire talent and invest in R&D. Two of the most dynamic and charismatic CEOs were UBER's Travis Kalanick and Wework's Adam Neumann. Both of them are now ex-CEOs.

The *Vision Fund's* \$10 billion stake in UBER is what brought UBER to its IPO in May 2019 at a market cap of \$75.5 and a share price of \$45. At the close of trading on the 3rd of October this year, the stock was trading at \$29.72 and the firm had a market cap of \$50.44. What happened? UBER lost \$5.2 billion in the three months ending in June, its largest quarterly loss ever. Stock-based compensation related to its initial public offering accounted for \$3.9 billion, but the remaining \$1.3 billion in losses were still 50% higher than the year before. Uber's CEO, Dara Khosrowshahi, who replaced Kalanick in August 2017, was unflustered: "The business model is absolutely sustainable. The business, for example, is still growing 30-plus percent on a global basis. And anytime you have a business that has the kind of market size of trillions of dollars in terms of transportation and food and global commerce, it makes sense for a company to invest." I guess it depends on whose money you are investing, Dara.

Mr. Son was ready to make a very big bet on Wework, which is a company founded in 2010 by Neumann, his wife Rebekah and Miguel McKelvey (the company's Chief Culture Officer <Huh?>). It is called a co-working firm instead of what it is, a commercial real estate company, because it buys leases, builds out the space and rents it, in part, to technology start-ups. This was the vision pitch Neumann made to Mr. Son. Up to the point that Wework was set to make an IPO, originally scheduled for September, SOFTBANK had so far committed \$8.4 billion to Wework, including a \$3 billion stake announced in November 2018 which valued it at \$45 billion. Mr. Son was ready to go further. He proposed a majority takeover of Wework for \$16 billion. That was one step too far for the *Fund's* investors. Wework had lost \$2 billion in 2018 and other investors were concerned about the co-working firm's "astronomical valuation and its potential exposure in the event of a

downturn”, according to the *WALL STREET JOURNAL*. On September 24th, Neumann resigned as CEO of WeWork, and on September 30th, the company formally withdrew its S-1 filing for an IPO. The current value of the company is around \$10 billion, which is less than the \$12.8 billion it had raised since 2010 when it was founded.⁷

In a *FORBES* article on the 7th of October, Mr. Son said he was embarrassed by his track record following big bet on loss-making businesses like UBER and WEWORK.⁸ SOFTBANK’s own shares have fallen more than 30% since April of this year. When Nvidia faltered in 2018, Mr. Son decided to cut his losses and sell his entire stake in the company, which was \$4 billion. At the time of the sale, the stock was worth \$3.6 billion. *Vision Fund* investors could well decide to cut their losses and move out of UBER as well as WEWORK. That would put investments in other non-positive revenue companies like CRUISE (\$2.5 billion investment from the *Vision Fund*) into question.

Why Musk Must Push (Not So) Smart Summon

A FROG is sitting along the edge of a river, about to swim across, when he is joined by a scorpion. The frog starts to jump into the river, but the scorpion calls out and asks him for help. He tells the frog he would be forever grateful if he would carry him on his back across to the other side of the river. The frog decides that it would not make sense for the scorpion to sting him as they were crossing, so he agrees. Half way across, the scorpion stings the frog. As the poison takes hold of the frog and both he and the scorpion begin to sink below the surface, the frog asks the scorpion why he stung him if he knew that it would also mean his own death. The scorpion replied: “I had to. It’s in my nature.”

And so it is with Elon Musk. The so-called ‘Smart Summon’ feature does not work faultlessly. Maybe it works for the Musketeer between his garage and his front door, but put it into a parking garage and stand outside at the curb, and, chances are, you will have a trail of insurance claims and a scratched up TESLA to boot. It supposedly works only within a range of 200 feet between the parked car and the mobile app, and the company has told its owners that the feature should only be used in private driveways and parking areas “for now”. We know how that works. Tesla tells its drivers to keep their hands on the wheels when the car is in Autopilot. These are adults, Elon, who have as much respect for obeying as you do. If you make it possible, they will do it.

7. History doesn’t stop. On the 22nd of October, SOFTBANK took over WEWORK, buying out Neumann for \$1.7 billion and forcing him to leave the board. The firm will have a value of around \$8 billion. There was apparently a rival offer from JP MORGAN.

8. David Dawkins. *FORBES*. Soft-Bank Founder Masayoshi Son ‘Embarrassed’ Over Investment Track Record. (Oct 7, 2019).

Self-driving Not Driverless

If there was any question about who is responsible for accidents or injuries caused by the Tesla when it is moving from its parking place to a position at the feet of the coddled owner, the California automobile authorities have put the doubts to rest. The vehicle is not driverless, even though there is no one sitting behind the steering wheel. The driver is the person operating the remote device initiating the action, and that person is responsible for any damage. It does not matter what the nature of that device is or whether the person who caused the vehicle to move is actually controlling the turn-by-turn movements of the vehicle (e.g., using some form or remote steering). While American owners of Teslas can use the feature without fear of being slapped with fines, it is not allowed in the EU, thank you very much.

A Dispatcher's Musings: The Will to Charge

Only 10% of electric vehicle buyers are between the ages of 25 and 34, according to Cox Automotive. A big reason: price. Younger generations of Americans are struggling with student debt and wage stagnation at a time when more than 70% of electric car customers' incomes are at least \$100,000.

9. If you say there is an elephant in the room, you mean that there is an obvious problem or difficult situation that people do not want to talk about.

Cambridge Dictionary

10. *Tesla Inc.: The Most Misunderstood Car Company.* THE DISPATCHER, November 2018.



Every Tesla charging station is an advertisement for Tesla, not an oil company or a convenience store chain.

How is it that a car company with miniscule sales and huge losses was able to build a global battery electric vehicle charging network when a number of much larger and profitable competitors could not muster the money or the will to build out their own BEV charging network or, in the case of Toyota, Daimler and Honda, a hydrogen fuel cell refueling network?

Remove your hat. Replace it with the hat of a CEO of any automobile company—except TESLA. Place yourself in your board room with a view of Munich, Stuttgart or Windsor, Ontario across the Detroit River. You have been hearing from your board of directors all the reasons your company should be electrifying as quickly as possible, before it's too late. There is a pause. You have the floor. Then you ask: "Yes, I hear what you're all saying. But can we make money as an electric car company?"

Silence. TESLA is the elephant in the room.⁹

For the past sixteen years, TESLA has been building and selling only battery electric vehicles (BEVs). It has generated a total of \$50 billion in revenue over that period selling 550,000 cars (one-half of them in 2018) and has amassed a cumulative total of \$5.5 billion in losses in the process. That means for every car TESLA has ever sold, it has lost \$10,000 per car. Before it started selling the *Model 3*, it was losing close to three times much that per car. So the question, "Can we make money as a BEV company?" is a very valid one to pose. TESLA has stayed in business thanks to its investors, including those who buy its very high-priced stock. It's been close to lights out many times.

One year ago,¹ I wrote about why I believe those investors have been willing to pump money into TESLA's tank to keep the company's engine turning over while it glides on its silent electric motors through its tunnel of hope and glory. The only sounds that can be heard are the shrieks coming from the company's CEO driver: "We'll succeed! More fuel! I see the light even if you don't!" Musk built up those losses, in part, by doing the two most important things to sell the first two models, the *Model S* and *Model X*, so he could get to the third model, the *Model 3*, into the hands

of customers and finally add volume to TESLA's sales: First, he developed an electric car that had the longest range, and second, he built a charging network of sufficient coverage, especially in its major market, California, to make it reasonably convenient for customers to keep going or to get home, and he offered it—at least initially—for free!



Getting religion isn't just singing hallelujah

Suddenly, everyone is announcing that they are going to produce all-electric cars. Whether it's because the car companies believe governments will get serious about their plans to halt sales of ICE vehicles or because investors have told them it's the only way to boost their stock prices, they are all delivering the same message: Electric or Bust! FORD predicted recently that BEVS will outsell ICE cars by 2022. If that happens, I hope for FORD's sake that it has more to offer than one or two models by that time. But I do not believe all-electric cars will be anywhere close to 50% market share in two years. Here's why.

If producing BEVs was enough, GM wouldn't have killed its *Volt*—although, technically, it was only 99.9% battery electric because it had a small gasoline engine to top up the battery. If producing electric cars was all that was needed, BEVs would not represent just around 2% of the total U.S. fleet. California on its own accounts for over 50% of that total. Electric vehicles sales rose in Europe from 72,653 units in Q2 2018 to 98,553 in Q2 2019. That is still just 2.4% of all new car sales in Europe, which amounted to 4,109,573 units in that period. If producing electric cars was sufficient, it would not be necessary for governments to subsidize purchasers to the tune of up to €7,500 in the U.S., €12,000 in Norway and €7,500 in China (until March 2019 when it halved the amount).¹¹

The reason why TESLA is the only electric car manufacturing company that is selling electric cars in still small, but now reasonable numbers, is because TESLA is the only company that, from the start, solved THE MAIN PROBLEMS with battery electric vehicles:

In a comparison test of the *Tesla Model X*, *Audi E-TRON* and *Jaguar I-PACE*, driving at 120 KM/H on the German Autobahn, the *Model X* was the clear winner in range.

11. Norway was a poor, little fishing and farming country until it discovered a huge pot of oil in its national waters. Now it is a rich, little electric car haven with more BEVs per capital than anywhere else. It got there by removing excise and sales taxes from BEVs, exempting them from road tolls, providing them with free parking spaces, building charging stations so that there is one every 50 kms and then giving away the electricity. It's cheaper to buy and run a TESLA than a *VW Golf*.

12. There are plenty of problems with electric cars, not the least of which is the added cost of buying one. But if you have the money to buy a TESLA, you have the money for a home charging station and a Wi-Fi connection to your garage for over-the-air updates. You can feel as green as the *Jolly Green Giant* and you can avoid getting your hands soiled filling up your car with smelly gasoline or diesel fuel. And if you really need to get somewhere that the BEV can't take you, you have the Mercedes-Benz in the next garage bay.

range and **charging**.¹² Approximately 98% of people who buy new cars are not rushing to purchase BEVs because they are a pain in the neck, and that pain comes from having to plug them in everywhere you go.¹³ Even at TESLA's super-fast Supercharger charging rate, it's still 30 minutes to get a full charge versus a 3-minute stop to fill up with petrol or diesel. That's not a "quick cup of coffee" as TESLA advertises, but it's better than six of hours for a full top-up of a *Nissan LEAF* at the 22kW charging rate. You can get farther on a single charge in a TESLA, and when you run out of juice, there's a Tesla charging station in the vicinity. NONE of the other car companies even mentioned building their own charging networks.

When TESLA owners fill in surveys, they wax lyrical about how they are so happy to be able to support an American car company—a California one to boot—that is saving the planet.¹⁴ They say how much they hated to fill up their car with oil-based fuel that came from non-American countries. They talk about wanting to support TESLA because electric cars are the future and they want to be early adopters. But many of the responses mention why TESLA made it possible for them to take the big electric step.

"I always wanted an electric car due to environment reasons, but I wanted a practical car which I can use for short and long drives and I don't have any charging options in my apartment."

"I had an 80-mile commute round trip—so a (Nissan) Leaf was a no-go, because I'd be at the absolute top-end of its range and didn't have charging at work at the time."

"We take frequent road trips, longer than 200 miles, so the fast charging network was an important factor."

"The Super Charger network tipped me in favor of the Model 3."

"Super Charging is outrageously fantastic and it enables long-distance travel almost everywhere."

All of the car companies, from AUDI and BMW to TOYOTA and Volvo—with the exception of TESLA—have begun their electric journeys as their predecessors began their internal combustion engine business lives 100 years ago. Henry, Giovanni, Louis, Gottlieb and the others said back then: "We'll build the cars and everyone else will deliver what the cars need to run—roads, fuel, lubricants, tires, repair shops. And, just as the car company found-

13. Plug-in hybrids solve the range anxiety problem, but they seem to be the worst of both worlds. You have to charge them and fill them up with fuel. If you want to take full advantage of plug-in electric car features, you need to take a course in how to use the various driving modes. When they appeared, I thought they were the answer, but after giving them a lot of thought and test driving them when my ICE is in for service, I simply do not see the point. Buy a BEV or buy a fuel-efficient ICE.

14. <https://forums.tesla.com/forum/forums/why-did-you-buy-model-3>



Put a Tiger in Your Tank was the slogan for Esso, the name taken by Standard Oil after its breakup into 34 companies 1911. One of them, Standard Oil of New Jersey, became Exxon Corp. in 1973. The 'Tiger' slogan came in 1964.

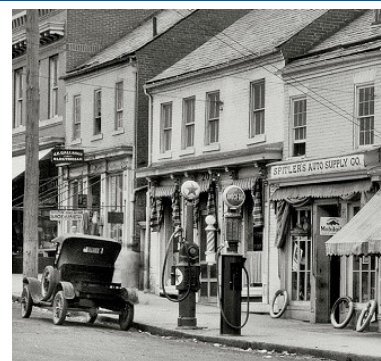
ers had thought, right on cue, all the others did their jobs. FIRESTONE and MICHELIN made tires; ESSO and SHELL refined the gasoline and motor oil; states and cities built the roads.

FORD and GM, in particular, are poster children for the “We-did-it-once; we’ll-do-it-again” electric car club. Ford introduced its first BEV concept car, the *Ford Focus Electric* at the 2009 Frankfurt Motor Show. Its pre-production model was unveiled at the 2011 Consumer Electronics Show (CES), and deliveries began in December 2011. Since then, it has sold a whopping 9,000 in the U.S. and the equivalent of spare change elsewhere. Ford will introduce its second BEV, a crossover, in 2020. GM showed its production-ready *Chevrolet Bolt EV* at the 2016 CES after four years of development and brought it out in October of that year. Around 40,000 have been sold in the U.S., and 5,000 were sold in Europe before *Chevrolet* exited the European continent in 2018 and the Bolt EV was discontinued. Similar tales can be told of all the other companies offering electric vehicles, except for one, TESLA. **That is about to change.**

At least one sleeping giant seems to be waking up

During the year that has passed, I have seen signs from one car OEM, VOLKSWAGEN, that indicates it has understood what it will take for it to survive the brutal attacks from politicians, climate activists and born again automotive journalists who have seen an opportunity to get on the ‘right’ side of history by criticizing what they had promoted, namely, the advantages and joys of the private automobile. It is not just building electric cars—that’s the easy part—but keeping them on the road in a way that makes it attractive for consumers to finally start buying them because they are a better alternative than ICE or hybrid vehicles.

The rumors that VOLKSWAGEN was interested in buying TESLA or taking a major stake in the company started for real in August this year with an article in German business publication *MANAGER MAGAZIN*. Reuters picked up the story and spread it around the globe. It said that VW’s CEO, Herbert Diess, was interested in TESLA’s competence in the battery and software fields. According to the magazine, “Diess would go in right away if he could.” Reuters added that the company had enough money to purchase a stake, but according to a banker close to Volkswagen, “...although Diess would like to have TESLA’s software developers, he doesn’t believe that it would justify



Curbside pumps, like this one from Texaco, were common before Gulf Refining Company established covered, drive-through stations in 1913.



paying \$30 billion to buy the whole company.” Diess would also need to get the consent of VOLKSWAGEN’s dominating owner families, the Piechs and the Porsches.¹⁵

Speaking at the 2019 Frankfurt Motor Show, Herbert Diess put all of these rumors to rest thusly: “I wouldn’t buy a stake (in TESLA) because I think all they are doing, we can do.” He said further: “I really admire what it has done, which is also helpful for us because it is really pushing us. The cars are nice and I like to drive them.” He didn’t stop there. “In the long run, I think we might have a bit of an advantage because of scale. On the hardware side, there is probably not so big a difference because they also have a dedicated electric platform and they’re quite big already for an EV manufacturer. But when it comes to the next big thing, which is software, TESLA is strong in software – but software really is a volume game. If you do software, you have to use ten million devices, not one million.”

So, let’s parse Diess’s statement. It would have been different if he had said: “Everything they are doing we are doing.” Being able to do something does not necessarily translate into actually doing something. But VW is doing electric vehicles. Production of the €35,000 ID.3 will start in November, and it had 10,000 pre-orders for the car within twenty-four hours of opening its books in May. Diess is making it clear that VW has both the will and the resources to deliver electric cars in volume, and to do it better than Tesla will be able to do. However, as I said, producing electric cars is small beer. What Diess did not mention in his Frankfurt interview is VW’s real ace in the hole.¹⁶ Actually, it is two aces.

The first ace is ELECTRIFY AMERICA, a company that owns and manages an electric vehicle charging network. It was established in 2017 as a subsidiary of VOLKSWAGEN GROUP OF AMERICA. Forbes wrote in an April 2018 article that VW established ELECTRIFY AMERICA as ‘penance’ for its emissions sins.¹⁷ Whether VW sees it as part of the compensation for its offense or not, it is going to be the difference between VW limply pushing out BEVs and PHEVs like the rest of the OEMs versus selling them in volume. VW has said it will be selling one million electric cars per year by 2025. That’s around 10% of its total sales.

ELECTRIFY AMERICA is building a charger network throughout the United States of non-proprietary electric vehicle chargers, supporting CCS, CHAdeMO and J1772 standards. There are two types of charger installations being installed: over 2,800 level 2

15. The Porsche family owns a majority stake of 52% in Volkswagen.



The Volkswagen ID.3 is a compact (C-segment) electric car produced by VOLKSWAGEN based on the MEB platform, and the first model of the I.D. Series. It was unveiled in 2019 at the *Frankfurt Motor Show* after being first shown as the I.D. concept car at the 2016 *Paris Motor Show*.

16. An ‘ace in the hole’ is a major advantage that one keeps hidden until an ideal time. The phrase originated in poker, in which an ace is the most valuable card. Primarily heard in the U.S.

17. Gardner, Greg. FORBES. *Volkswagen’s Penance Will Expand Nation’s Fast-Charging Network*. (April 23, 2018).

(7.2kW AC) chargers at 650 community-based sites, and 2,000 DC fast chargers at 300 highway sites across the country. The charging network roll-out. By the end of 2019, Electrify America is scheduled to have installations completed in 42 states and 17 large metropolitan areas.

The second ace is VW subsidiary ELLI GROUP GMBH. Thorsten Nicklass, CEO of ELLI, explains “the name ‘Elli’ stands for ‘electric life’ because we intend to enable a lifestyle that fully integrated the electric car in people’s everyday lives. This approach could be compared with the use of a mobile phone, which is taken for granted nowadays.”

ELLI is building a portfolio of what the company calls “intelligent power tariffs”. It is providing a range of solutions, initially in Germany, including an at home charging solution called *Wallbox*, destination charging stations for employees at their businesses, for fleets and chain outlets, on-the-road charging stations, and an IT-based energy management system.

ELLI will supply 100% CO₂-free *Volkswagen Naturstrom*[®] power to private households and small businesses with and without electric vehicles. TÜV Nord certifies that the power comes from environmentally certified wind, solar and hydropower facilities in Germany, Austria and Switzerland.¹⁸ Services are not only available to customers of Volkswagen Group brands but also to owners of all electric vehicles. Thorsten Nicklass sums up ELLI’s mission: “*With our Naturstrom[®] offering, we want to make eco-power easy and inexpensive to buy and to establish ourselves as a reliable partner for innovative, sustainable energy solutions for households and electric vehicles.*”

My best friend is the one who brings out the best in me

Henry Ford said this, and it seems that VW is now FORD’s best friend. On 17 October, FORD announced it was teaming up with VW to deliver charging options to its car customers. FORD said the charging network would be “the largest in North America, from highways to homes, with 12,000 locations and more than 35,000 charge plugs.” VW’s ELECTRIFY AMERICA is providing the network.

Seventy-four years earlier, in 1945, Henry Ford predicted that VW’s first car, the *Beetle*, “would only be popular for two or three years at most” because its performance and qualities have no attraction to the average buyer. “It is too ugly and too noisy,” he said.¹⁹ Somewhere along the line the companies kissed and made up. FORD is now counting on VW to give it a boost.²⁰



As one of the world’s largest automakers, Volkswagen is going to force the pace of the urgently needed transport and energy transition to emission-neutral e-mobility. The new company will play its part with energy offerings from renewable sources and smart charging solutions. This way, we are entering a strategically relevant, extremely exciting business area that offers considerable opportunities for strengthening ties with existing customers as well as accessing entirely new customer groups.

—Thomas Ulbrich, Volkswagen brand Board Member responsible for E-Mobility

18. TÜV – TECHNISCHER ÜBERWACHUNGSVEREIN (TECHNICAL INSPECTION ASSOCIATION) are German businesses that provide inspection and product certification services.

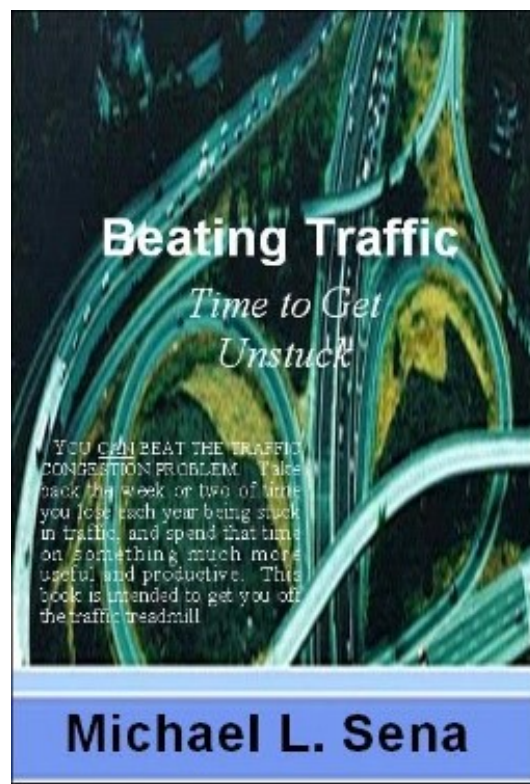
19. Sutton, Richard. **Motor Mania: Stories from a Motoring Century.** A Channel Four Book (1997).

20. Boost: To charge a dead battery with jumper cables in order to start a car. “Can you give me a boost? My battery’s dead.”

About Michael L. Sena

Michael Sena, through his writing, speaking and client work, attempts 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, how and why developments are occurring so that you can develop your own strategies for the future.



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Michael L. Sena

Editor

SUNDBYVÄGEN 38

SE-64551 STRÄNGNÄS

SWEDEN

PHONE: +46 733 961 341

E-MAIL: ml.sena@mlscab.se

www.michaellsena.com