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Workers leave FCA CHRYSLER Warren Truck Assembly after the Detroit three automakers have agreed to UAW demands to shut down all North America plants as a precaution against coronavirus, on March 18, 2020 in Detroit, Michigan.

Jeff Kowalsky | AFP | Getty Images

*"DETROIT (AP) (3/18/2020) - Two people briefed on the matter say Detroit's three automakers have agreed to close all of their factories due to worker fears about the coronavirus.*

*The United Auto Workers union has been pushing for factories to close because workers are fearful of coming into contact with the virus.*

*GENERAL MOTORS was beginning a "systematic orderly suspension" of manufacturing in North America beginning soon. The shutdown will last until March 30. The plant closures will happen one-by-one. The Flint Assembly plant will be operating until the end of second shift on March 25 before closing -- a full week after Wednesday's announcement.*

*"You just have to roll with the punches, not panic," said UAW Local 598 official Paul Muehlenbeck Jr. "Everyone's kind of panicking. Just do what you normally do, everyone use common sense, wash your hands, we shouldn't have to be told that."*

*GM workers in Flint have expressed frustration over the past week about remaining open and working in close quarters with each other during the coronavirus pandemic."*

## The Automotive Industry in a Post-COVID-19 World

### 1. William Shakespeare

#### The Tragedy of Julius Caesar

##### Act I, Scene 2

A public place

*Soothsayer.* Caesar!

*Caesar.* Ha! who calls?

*Casca.* Bid every noise be still.

Peace yet again!

*Caesar.* Who is it in the press that

calls on me? I hear a tongue,

shriller than all the music, Cry

'Caesar!' Speak; *Caesar is turn'd to hear.*

*Soothsayer.* Beware the ides of March.

*Caesar.* What man is that?

*Brutus.* A soothsayer bids you beware the ides of March.

*Caesar.* Set him before me. Let me see his face.

*Cassius.* Fellow, come from the throng. Look upon Caesar. *Soothsayer approaches.*

*Caesar.* What say'st thou to me now? Speak once again.

*Soothsayer.* Beware the ides of March.

*Caesar.* He is a dreamer. Let us leave him. Pass!

2. In an uncharacteristic move, the STANDING COMMITTEE OF THE NATIONAL PEOPLE'S CONGRESS on the 24<sup>th</sup> of February 2020 bowed to international pressure by imposing a total ban on trade and consumption of wild animals in a move that is aimed at curbing activities that scientists say probably caused COVID-19, SARS, the Asian Flu, the Hong Kong Flu and the Spanish Flu to jump from animals to humans.

### Lessons learned from a global shutdown

*Europe closed down between the IDES OF MARCH<sup>1</sup> and the SPRING EQUINOX as a result of the COVID-19 outbreak. The U.S. and the rest of North and South America did likewise. At about the same time, China was re-opening for business. Is there anything useful we can learn from the events of the past four months that might help us avoid a recurrence of what we have experienced, and are continuing to experience, especially for the automotive industry, which is troubled as it is? This article can be seen as a continuation of the lead article in the March issue, The U.S. and EU Can Still Save Their Car Industries. My intention here is not to criticize, but to analyze.*

THE CORONAVIRUS OUTBREAK offers a convenient opportunity to those who are critical of The People's Republic of China's economic and political rise to speak condescendingly of the country. How could a country which purports to be a global power allow such abysmal food hygiene practices that periodically result in epidemics and global pandemics? The practice of capturing, selling and eating wild animals (e.g. bats and pangolins) that are considered sources of pestilence has been outlawed in the West for over a century or more, yet it has continued to be allowed in The People's Republic of China, provoking regular outbreaks of epidemics that result in sickness and death both inside its country's borders and all over the world.<sup>2</sup> There is truth in the criticism, but it is hypocritical nevertheless.

When China opened up its trade in the 1970s, I do not recall that there were any demands placed on China to improve its food hygiene laws, eliminate its use of endangered animal species in its homeopathic medicines or to move to a transparent, democratic system for guarding intellectual property. Western businesses rushed to China to sell their products into a market of close to a billion people in the middle of the 1970s and to have their products produced at a cost that could not be

matched anywhere else. The Chinese Communist Party made no secret of their motives for opening up trade with the West, nor of their ambitions: They wanted to make the country rich to increase the Party's and the country's power. No one in a position of power, be it the President of the United States or any of the other leaders of Western countries, raised their voices in protest. Instead, it was "Globalization here we come! Full speed ahead."

And so here we are, forty-five years later. Factories in China which closed for the Chinese New Year on the 25<sup>th</sup> of January did not reopen two weeks later because of quarantine measures the country took—belatedly, as it turns out—to stop the spread of the virus.<sup>3</sup> Operations should have been back to normal around the 21<sup>st</sup> of February, but by then, almost 80,000 people had been infected globally and 2,360 people had died, mostly in China, but also in other countries, notably Italy and Iran. Ships and planes were not being loaded with finished products and parts because they had not been produced or because work places were closed. Businesses in the West gradually began to run out of stocks to sell to waiting customers. All the while, the virus spread to all corners of the world due to delays by the Chinese authorities in acknowledging that there was a severe problem and the slow implementation of measures to contain and control it, first in China and then in the countries where it spread.

During these past forty-five years, the West has become totally dependent on China, which proudly proclaims itself to be The World's Factory. It certainly deserves the title. It has worked hard to earn it. One point that has come to light as a result of this virus outbreak is that a large share of the world's supply of antibiotics depends on a handful of Chinese factories.<sup>4</sup> China is dominant in the *active pharmaceutical ingredient* (API) sector, and when the country was locked down to try to stop the spread of COVID-19, the world's dependency was definitely felt. As *THE ECONOMIST* article points out, "America's last penicillin fermenter closed in 2004 ...because it could not compete with the many clusters of Chinese factories, many state-owned or subsidized, which offered efficiencies that could not be matched."

Only now are voices of protest being raised. Christopher Priest, a senior U.S. Pentagon official, said that "the national security risks of increased Chinese dominance of the global medical API market cannot be overstated." Peter Navarro, an advisor to the current U.S. President, declared that the U.S. "has outsourced far too much of its supply chain for essential medicines." Where were

3. As of the 9th of March, VOLVO CARS' four factories in China had been closed for six weeks. Two of those weeks were planned closures for the New Year, but they did not open afterward due to the virus. VOLVO's China sales in February were down 81.5% compared to February the year before, which pulled its global sales down by 8% for the month. On the 12th of March, VOLVO announced that two of the factories would open immediately and the other two would open the following week.



VOLVO's plant in Luqiao, China makes the XC40 as well as the Polestar 2, the all-electric 5-door fastback by automaker POLESTAR, which is 50% owned by VOLVO CARS and 50% owned by ZHEJIANG GEELY HOLDING. Production is planned for early 2020 in GEELY's existing plant in Luqiao, China, which already produces Volvo XC40, Lynk & Co 01 and Lynk & Co 02, all of which share the same CMA platform.

4. *THE ECONOMIST* February 29<sup>th</sup> 2020. Chaguan: Globalisation under quarantine.

these critics before, when U.S. businesses were abandoning their domestic operations in favor of allowing the Chinese to do it all? The same tale can be told for Europe. And it's not just medicines. China is dominant in many areas: Steel (50% of global production 2019), smartphones (49% of exported production 2018), automobiles (28% of world production 2018), trains, nuclear plants (50% of planned production), cement, and chemical fertilizers. And then there is coal.<sup>5</sup> The list is long.

Let's add one more item to the list: medical face masks. China is the world's largest producer of them with a reported capacity of 20 million per day. Half of the world's supply is produced in China. As the virus spread in China, the domestic demand for face masks apparently rose to 60 million per day. But, since their production ability was hampered by the numbers of people who were quarantined, they were not producing enough to satisfy their domestic demand and they weren't exporting any to fill the shelves of hospitals and pharmacies in the West. So, when it was time for health workers and sick patients in Italy and Spain to start needing them, the cupboards were bare. I tried to buy face masks at the end of February in the Stockholm area, before my trip to Geneva on the 3<sup>rd</sup> of March and they were nowhere to be found.

### **Why did this occur and will it continue?**

The People's Republic of China became The World's Factory because companies, irrespective of whether they are publicly- or government-owned (*see Dispatch Central about Stockholm's new bridge*), will always seek out the lowest-cost places to produce their products, regardless of where these places are, and democratic governments have believed that it is their job to protect the right of their companies to pursue the lowest costs in order to provide their citizen-consumers with the benefits. Let's be clear. Chinese businesses were happy to produce anything you wanted, but you had to accept that your designs were most probably going to be reversed engineered. If you wanted to set up shop in China to gain the advantages of lower wage costs and closer access to the developing ecosystems, you needed to do it in a joint venture with a Chinese company and share your IP with your JV partner.<sup>6</sup> Both conditions seemed to be worth it. It was the price you paid to play.

Gradually, China attracted more and more production. As it did, it attracted more and more of the suppliers that contributed to the production of certain products, like smartphones and pharmaceuticals. Then came the design engineers and the process engineers and research scientists and the entire ecosystem for each of the

5. China is the largest coal producer in the world with a production of 3.6 billion tons in 2019. The U.S. was second with 922 million tons. China has the third largest coal reserves in the world, behind the United States (which has twice as much as China) and Russia. China, by some estimates, could sustain itself on its coal reserves for more than a century. (Obviously, so could the U.S. if it mined and burned it.) The largest open-pit coal mine in China is situated in Haerwusu and has an estimated 1.73 billion tons of coal reserves. Majority of the coal is consumed domestically with China being the world's biggest coal consumer, with an annual consumption of about 3.2 billion tons. China is also a global leader in the production of non-metal minerals. The country has an annual production rate of 97 million tons of phosphate rock. Other valuable minerals produced in China are tungsten, copper, tin and iron ore among others.

6. This rule is being relaxed. In June 2018, Chinese President Xi Jinping announced a planned rollback of the manufacturing foreign ownership limits first set forth in the 1990s, which require that manufacturing operations in China be at least 50% Chinese owned. Specifically, China will begin by eliminating this ownership requirement for electric vehicle production and gradually roll back the requirements for all other automobiles as well as airplane manufacturing and shipbuilding until all limits are lifted in 2022. "This move, coupled with China's aggressive 10% electric vehicle mandate starting in 2019, emphasizes the concerted efforts being taken by the Chinese government to dominate the future global electric vehicle manufacturing industry." *Foley & Lardner LLP, 19 April 2018.*

product areas, attracted by the sheer force of gravity that was building in each of the Chinese centers. You don't own one-half or more of the production market for any product unless you own most of the ecosystem that goes into that product. Put another way, you aren't going to take back production market share for any product unless you take back most of the ecosystem.

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Leaving aside for the moment the COVID-19 effects, are the favorable conditions for China still valid, especially given the push by the U.S. to tip the competitive scales back in its favor through tariffs and renegotiated trade deals? With 1.38 billion people, there are still more low-wage workers than there is demand for them, so wages will remain low.<sup>7</sup> This is reinforced by the fact that many immigrants to cities have come from rural areas where wages are very low, so those who have come recently and those who will come in the near future will continue to work for low wages. Shanghai's minimum hourly rate in January 2020 was the equivalent of \$3.16 per hour. It's double that in the U.S. and three times higher in Germany.

While wages are growing in China, the business ecosystems there are expanding and growing more dominant. Industrial production depends on networks of suppliers, component manufacturers, distributors, government authorities and customers who create the processes required for efficient production. China has created hubs for every type of product, from electronics to pharmaceuticals. It's those supply chains that make producing in China so irresistible. By producing in China, a company like APPLE can keep costs low and margins high.

Regulations, which are plentiful in the West, are best described as 'fungible' in China, meaning they are readily changeable to adapt to new situations.<sup>8</sup> Child labor prohibitions, workers' compensation insurance, hours of work, environmental protection and other areas where legal obligations often hobble Western companies are not fixed by laws that are applied to all everywhere and equally.

Does China artificially depress the value of the Yuan to give its exporters an edge against similar goods produced by Western competitors? China manages the appreciation of Yuan by buying U.S. Dollars and selling Yuan. The Yuan was estimated to be undervalued by 30% against the dollar in late 2005. In the January 2020

7. 28% of the people in China still work in agriculture, compared to 1% in the U.S., Germany and the U.K.

8. Merriam-Webster:  
<https://www.merriam-webster.com/dictionary/fungible>



Big Mac Index<sup>9</sup> of foreign exchange values, the Yuan was undervalued by 50%. Whether it is undervalued today or not is less important than the fact that China is able to control its value.

### **What happens when we are out of quarantine?**

Once COVID-19 fades from memory, just as all of the plagues that have ravaged civilizations in the past eventually faded, is there anything that will cause China to lose its dominant position as The World's Factory, particularly as its labor costs increase? That's not likely because the other factors weigh heavily. Countries must decide that value-seeking is, in the long run, destructive for their own countries if it results in one supplier-country becoming dominant, as China has managed to do in essentially twenty short years since it was invited to join the World Trade Organization (WTO). Then, and only then, will companies be compelled by their governments to rebuild their factories in their 'home' regions and attempt to reconstruct ecosystems of sufficient size to make production in those factories viable. They could start with penicillin and face masks and gradually move to everything else.

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It needs to be said that this is not about beating back China; it is about ensuring that life in all other countries can carry on when China cannot deliver for whatever reason. China has a domestic market that is large enough to keep it in roses for a long time to come. It does not need to produce everything for everyone in order for its own people to enjoy a comfortable life. But the rest of the world does need to produce a sufficient amount for its own needs to keep its medicine cabinets stocked, its automotive parts shelves filled and its people able to work in jobs that pay them for their work.

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One Achilles heel in China's dominance is relying on it to produce components that are used in the manufacturing of products in other countries. The spigot can be turned off by an epidemic like we are experiencing now, or for political reasons. An affront, real or imagined, can have very dire consequences for the country that has incurred the wrath of the Chinese government. Ask Norway. After the 2010 *NOBEL PEACE PRIZE* was awarded to Liu Xiaobo in Oslo, China stopped buying Norwegian salmon, one of Norway's principal exports. When, in 2012, China decided to challenge Japan's claims to tiny islands in what has been called the South China Sea, sales of Toyotas, Mitsubishis, Mazdas and Nissans tumbled by over 50% in China, and the companies temporarily closed their factories.

9. The Big Mac Index is published by The Economist as an informal way of measuring the purchasing power parity between two currencies and provides a test of the extent to which market exchange rates result in goods costing the same in different countries.

As already mentioned, another weak spot is the dependence on regular deliveries from China to replenish supplies as they are used. This is called 'just-in-time' delivery. Just-in-time (JIT) delivery is a fine idea in theory, and it is an extremely effective way to save money when it works in practice. It was Toyota that developed and perfected JIT in the 1960s and 1970s. It is also known as the Toyota Production System. In the 1990s it morphed into 'lean manufacturing'. Simply put, you bought what you needed when it was needed. That saved both money and space, two things Toyota was short of back in the '60s. The reason it worked so well for Toyota was that its suppliers were huddled around it. This was also the case in the West when it was first applied. GM and Ford owned their suppliers, and even though they started spinning them out at the time that outsourcing and lean production began in the late 1990s, they were still close by.<sup>10</sup>

Then the great move east of production occurred. Just-in-time applied to anything must always work in practice, otherwise products cannot be produced and time and money are lost. It becomes just-in-time failure. Just-in-time deliveries were put on hold when China was under COVID-19 lockdown during February. Car parts and protective face masks were not where they were needed, both inside and outside of China when they were needed. Medical staff worked without the masks in Italy and Spain, and many became infected as a result. The Western car companies simply shut down.<sup>11</sup>

Ensuring the continuance of operations is only one-half of the equation. The other half is getting the citizens of countries to manage their purchases so that the domestic companies are not disadvantaged on either price or quality. That is going to be the hard part, especially if people continue to be able to purchase products over the Internet or mail order and have them delivered from far off countries at costs which are lower than if they are produced in Western countries. Just putting up signs saying "Buy Swedish" or "Buy American" won't cut it if people can order three pair of shoes in Stockholm on the Internet that can be produced in and delivered from Putian, China and the cost of those three pair is less than one pair of TRETORN tennis shoes produced in an eventually re-built factory in Helsingborg, Sweden, where Tretorns used to be produced before being bought by PUMA and manufacturing was moved East.

10. GM sold off Delphi in 1999 and Ford spun out Visteon in 2000. In the case of automotive, assembly some parts production stayed in the U.S. and then in Mexico and Canada when the North American Free Trade Agreement came into force in 1994. NAFTA also made it mandatory to have 46% of a car's parts produced in the NAFTA countries.

11. A sample of automotive production shut-downs:

**FORD** – Shut European and North American production on 19 March.

**GM** – Suspended all North American production 19 March.

**FCA** – Closed down on 18 March with 14 April as planned re-opening date.

**TESLA** – Closed its Fremont, CA plant on 23 March.

**JLR** – Closed its UK plants on 20 March.

**VW** – Closed its U.S. plant on 21 March. Shut down in Europe on 17 March.

**TOYOTA** – Announced on 18 March that it would shut down all North American production on 23 March. On 19 March it announced it was shutting down all production.

## Business as usual or a global re-evaluation?

Politicians and business leaders have understood the negative consequences of dependence on China for a while. The light bulb probably went on when China passed the U.S. in 2007 as the Planet's biggest CO<sub>2</sub> emitter. That light likely burned brighter in 2010 when China became the world's top car market. But no one (well, almost no one) has done anything about it.<sup>12</sup> Has the pandemic made a deeper impression on our collective will to redress this global imbalance?

If we all go back to business as usual, China, rather than losing its dominant position, will likely become even more ascendant as a result of the devastation this virus has caused in the West. While the worst was just starting in Europe and the U.S. around the 10th of March, China was declaring victory over COVID-19 as a result of the "resolute actions it had taken," to quote the messages emanating from the country's officials. "The West is so naïve," they were saying. "They should learn how to fight these epidemics like we do." You will pardon me for feeling that this is not just a little bit disingenuous. In spite of its protestations and conspiracy theories, COVID-19 did start there and it took them two months of serious lock-downs to get it under control.<sup>13</sup>

As part of taking its victory lap, it was getting everyone back to work. On Monday, the 9<sup>th</sup> of March, I listened to a morning radio news program. There was a report direct from Beijing. Joe (not his real name) was being interviewed by a Swedish journalist. Joe had been back to work for two weeks already and was convinced that China had turned the corner on the virus. "Only a few more days and all will be back to normal," said Joe. Sue (also not her real name), told the reporter that today was her first day of work. Sue's company had kept their offices closed after the New Year celebrations were over because of the virus, she said. Now it was open and she was driving into work rather than taking the underground as she usually did because she felt there was less of a chance she would contract the virus. The journalist then reported from the underground, saying it was only half full because everyone knew it is the place where disease spreads most quickly.

As I was listening to this, for some strange reason I thought of the 'Butterfly Effect'.<sup>14</sup> That's when a butterfly flaps its wings in China and a tornado springs up in Kansas. People in the West, particularly in Sweden—where we are egged on by a sixteen-year-old that the country's major newspaper is promoting as a combination of Jeanne d'Arc and Pippi Longstocking—are giving up eating

12. There are a few world leaders (actually, maybe only one) who have been carrying on a bit of a crusade to bring back industries to their shores. Their message has not been popular in Davos, globalizations Mecca. I suppose it's easy to be a globalization supporter if you have your own private jet. Around 1,500 private jets landed in Davos this year for the yearly gathering of the approximately 3,000 influencers who attended in late January, before global COVID-19 lockdowns began.

13. On the 20<sup>th</sup> of February, when it appeared that all confirmed cases of COVID-19 were inside China's borders, *CHINA DAILY*, the country's English-language megaphone, wrote: "Were it not for the unique institutional advantages of the Chinese system, the world might be battling a devastating pandemic." On the 11<sup>th</sup> of March, WHO declared that COVID-19 was indeed a pandemic.

14. A book on my reading list is [The Butterfly Defect: How Globalization Creates System Risks, and What to Do About It](#), authored by Ian Goldin, professor of globalization and development at Oxford University.



meat, giving up flying, scrapping their cars to ride bikes in the freezing winter, and, if they do buy cars, buying BEVs, all to save humanity from the perils of climate change, while people in China go back to work, driving their cars to their Factories of the World. China was back to nearly full production by the middle of April, producing all the products and components that the West needs or will need once they can start buying them again. China's planes and trains and ports began operating as they had before the onset of the virus that started in Wuhan, carrying Chinese goods and their people to all parts of the world once again. Their start-up advantage will last as long as factories and businesses in the West are closed due to the virus that put Chinese businesses on hold for a mere four-to-six weeks (since they were mostly closed during the Chinese New Year for two weeks).

### **What we have learned; what we should do**

For one thing, we will take our cars when we leave quarantine, just as Sue (not her real name) did in Beijing. When workers in Detroit, Göteborg, Turin and Sindelfingen eventually return to work, those who have a choice will drive their cars so that they will not have to worry that the person squashed in next to them on a bus, tram, train or underground will sneeze or cough in their face, and so that they can drop off and pick up their children at school in order to protect their children from being sneezed or coughed on in buses, trams, trains or undergrounds.<sup>15</sup> They will continue to drive until the public transit authorities ensure them that their vehicles are disinfected, that people do not have to be squashed together during their travels and that those who ride their conveyances are not carriers of diseases that can be easily transmitted to other riders. How they accomplish will be the source of many new jobs. If you think this is exaggeration, ask yourself how you feel right now about riding a bus in rush hour.

When it comes to the type of car people will want to drive—if they are not forced by draconian taxes to purchase something they would rather not have, like a BEV—it will be one that will allow them to “get out’a Dodge” as fast as possible, and one that can be filled up to continue driving in minutes, not hours. Tesla's sales held up very well in March due to pre-orders, but I wonder how many people canceled their order for a *Tesla 3* after they re-watched the 2011 movie *Contagion* for the third or fourth time during the COVID-19 lockdown.

When people leave their self-quarantine quarters and start moving around again, it is not likely that their first choice for mobility will

15. When transit ridership fell off in Stockholm after the government urged businesses to allow employees to work from home and to limit travel to the absolute minimum, Stockholm's transit authority reduced the number of buses to reduce costs. As a result, those who did have to use buses to get to their jobs in hospitals, pharmacies and food stores found themselves queuing with more people and then squeezing themselves into overfull buses. That was definitely not how a public transit system should have handled the situation.

#### **The End of Activity-Based Working**

When people return from their COVID-19-free homes, the last thing they are going to look forward to is a working environment where they have to wonder “What did the last person who used this space leave for me?” Either companies are going to have to implement disinfect-after-you policies and provide the means to do so, or they are going to have to give people their own designated work places again.

be a vehicle that is being used by strangers, and it is very unlikely that they will want to share a ride with someone whom they do not know, including the driver. As early as the 18<sup>th</sup> of March, ridership for Uber in California, which accounts for fully 9% of its total revenue, was down 27%. Imagine what it's been like for taxi drivers who have no idea if the person they have picked up at the airport has just arrived from a COVID-19 hotspot and is carrying it back home to her family as a surprise present.

The virus has been used as an example of why driverless vehicles are a good idea. If you are infected with a contagious disease and need to get to a hospital, a driverless car is a good way of getting there, goes the argument. There is some merit in this, but, honestly, if we are living in a world in which COVID-19-type outbreaks become the normal, it would be better for everyone to walk around in space suits with their own life support systems. My proposal is to re-deploy all the smart engineers working on driverless technologies to develop individual life support suits, cures for all viral infections, safe nuclear energy and inexpensive hydrogen fuel cells.

While we were in quarantine, we saw what it would take to achieve zero emissions with zero technology, getting clean air by going cold turkey. As I have written many times, folks don't get into their cars just to drive around. They use their cars to go places they need to go, and if there are no places to go, they don't use their cars. Simple. When we leave quarantine, we will be able to look at our pre-COVID-19 presumptions and prejudices about climate change with new eyes. Whether you were a climate-first advocate before or not, you may have looked at empty streets, clearer skies and cleaner water (e.g. in Venice) and thought: "Yes, this is how it should always be." Everyone can work and school from home. We can have everything delivered to our doors and all of us (except, of course, for the people doing the delivering and producing what is being delivered and trying to invent vaccines for the current and next virus pandemic) don't have to worry about going anywhere. We humans (with some unfortunate exceptions, like ambulance drivers, doctors and nurses, dentists, barbers and those delivery people) will never have to worry again about contracting diseases from animals or each other, and Planet Earth will be able to survive until it is time for it and everything on it to blow up in 4.5 billion years.

But maybe you are someone who had a job that you lost because you couldn't do it from home, for example assembling cars in a



*Social distancing in close quarters.*

*"Lots of people need to get to places that public transit doesn't go to, and many of them don't own cars because they can't afford to buy them or to run them, or they are too old, too infirm or for some other reason incapable of driving them. The cost of a taxi is prohibitive because you are paying for someone to drive it and these drivers have to make a living wage. In other words, we shouldn't be trying to help Uber finally turn a profit. We should be delivering mobility to people who don't have it."*

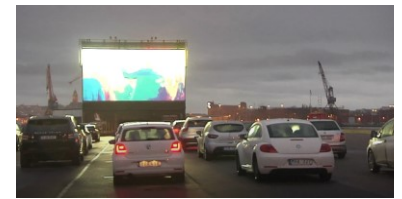
*THE DISPATCHER, April 2020*

factory. Or maybe you like the idea of continuing to watch your favorite sports team by sitting in the stands and cheering them on. Or perhaps you thoroughly enjoy doing other things like eating in restaurants, going to church (some people still do that) or sitting in a classroom, and you might have thought: "This sucks." I want everything to be like it was before, including streets jammed with traffic, airplanes taking off to all corners of the world, cruise ships cruising everywhere and everything else many of us want to be there when it's our turn to retire and enjoy them.

We now have a real look at what our world will look like if those who advocate for drastic climate change measures push them through. We haven't just simulated a virtual future with computer models; we have, or I should say the coronavirus has, created a real glimpse of that future, one that we can experience with all of our senses. How does it feel? (See A Dispatcher's Musings)

Young families with children cooped up for weeks in their apartments and condos in London, Paris and other large cities around the globe may be thinking that a small house with a fenced-in garden might be their next logical purchase. For various reasons, my wife and I bought condominiums in three locations after we decided to move from Sweden's West Coast and sold the house we had been renovating for eighteen years. We have a small apartment in the center of Stockholm. Our main residence is in a city of 35,000 about 80 kilometers west of Stockholm, and we have a vacation condo in one of Sweden's oldest cities, which has around 5,000 inhabitants. I was in Stockholm just as the country's controls started to take effect, returned as soon as I could to our main residence and then we decamped to the small town. I believe many people will be rethinking their desire to live in close quarters and cities will lose their attraction for all but the newly graduated and those who have the resources to buy homes outside the cities where they can go when the next virus attack occurs.

When the COVID-19 dust finally settles, if there was ever a time for the West's automobile manufacturers to speak with one voice, this will be it. It is not just GM and Ford talking to Washington, and the German companies talking to Berlin. All of the companies and their suppliers have to deliver one, strong message to their politicians collectively. **"You are killing us!"** In the middle of the factory shutdowns I read that governors in multiple states in the U.S. are going to use money obtained from VW as 'settlements' for VW's cheating on their diesel motors emissions claims to purchase electric buses. Who is the biggest producer in the world of



#### ***Bring Back the Drive-in***

*For those of you who are familiar with the Göteborg, Sweden skyline, you will recognize this scene. Over the weekend of the 4<sup>th</sup> of April, a pop-up drive-in was set up on what is called the Banana Pier in the middle of the Göta River. Because all public gatherings in Sweden are limited to under 50 persons, the organizers could sell only 49 tickets, one ticket per person, not per car. The cars had to be spaced with a minimum of 2 meters between them. Sound came through the cars' radios. The screen was a 80 square meter LED-display. Clearly, this idea will spread to other parts of the world. Who would have thought that something would happen to bring back outdoor drive-in theater? The last time I went to a drive-in was in the summer of 1978 with my parents. They were spending a week with me at a place I was renting in New Hampshire. When I was growing up, my sister and I and my parents went to the drive-in at least twice a month in the summer. If one opens up close by where we are holed up during the virus lockdown, my wife and I will be going.*

electric buses? A Chinese company called BYD (for Build Your Dreams). The company bills itself as “The Official Sponsor of Mother Nature”. Is there no end to irony? BYD stands to take home many of the contracts for those electric buses. Yes, it does have manufacturing in the U.S., but the major components for those buses will be arriving on ships from China.

Does it really make sense to transfer money from Western companies to Chinese companies in the name of supporting the environment? Even more ironical is providing bailout money to the car companies in times of crisis like the one in 2009 and the one now. If they weren’t forced to re-tool to build battery electric vehicles at the same time as paying extraordinarily high fines for not being able to make the deadlines for meeting unrealistic fuel and efficiency requirements, they might have been able to create a sufficient buffer to make it through rough times. Currently, the margins they can earn producing and selling cars does not allow the building up of reserves. They are barely scraping by to stay in business. Ask Ford.<sup>16</sup>

I listed four steps in the [March Issue of The Dispatcher](#) that Western country governments, businesses and consumers must take to save its car industry from being completely destroyed, with the resulting loss of tens of millions of jobs. These steps do not apply only to the automotive industry, but the automotive manufacturing sector is one that still remains in the West. Many others, like penicillin-making, have already been lost. I made these suggestions before the full effect of the COVID-19 pandemic ravaged Western countries and their economies, and I believe they are more urgent now that we see the effects of the pandemic.

### **In short, the automotive industry’s leaders should:**

1) Wake up and stop believing that the sweet smell of roses is wafting out of China. China will always support its home teams, one way or another. If Western companies believe their future is based on selling cars in China and not in the West, one day they will find the market closed to them unless they are assembling skateboards built by Chinese companies, or allow themselves to be acquired by one of the Chinese car companies. Just because TESLA is operating its own factory in China that is producing cars while its plant in the U.S. sits idle due to COVID-19, it should not get too cocky. It may find itself in the government’s radar at some point in the future;

2) Empower their workers to take actions that will save their jobs and Western economies. States in the southern part of the U.S., such as South Carolina, have attracted foreign automotive manufacturers with

16. The Trump administration proposed a lower increase in fuel-efficiency requirements for new cars and light trucks than those voted into law by the former administration. The new Safer Affordable Fuel Efficient (SAFE) Vehicles rule applies to most passenger vehicles for model years 2021 through 2026. Administration officials who announced the new rule on March 31<sup>st</sup> said “it will save hundreds of lives each year by encouraging families to buy newer cars that have the latest safety features because they’ll be more affordable when freed from meeting tougher standards.” U.S. Secretary of Transportation Elaine Chao said further: “This rule reflects the Department’s No. 1 priority—safety—by making newer, safer, cleaner vehicles more accessible for Americans who are, on average, driving 12-year old cars.” The final rule will increase the level of allowed Corporate Average Fuel Economy (CAFE) and CO<sub>2</sub> emissions by 1.5% each year through model year 2026, rather than by the 5% required by the rule issued in 2012 under President Barack Obama. In effect, the standard will require cars and light trucks to average roughly 40 miles per gallon by 2025, down from about 50 miles per gallon under the Obama rule. Former President Obama broke his rule on criticizing the current President: “We can’t afford any more consequences of climate denial.” I voted for Barack Obama twice for President. His administration bailed out the U.S. car industry during the financial crisis, which is one of the best decisions he made. But the fuel and emissions rules his team were pushing were attacking the wrong problem and creating disastrous side effects, including people hanging on to their old, polluting cars rather than buying new fuel-efficient and lower emissions cars because of their high prices.



multiple types of incentives to locate their U.S. factories in their jurisdictions. One incentive is that these states have right-to-work laws which forbid unions and employers to enter into agreements requiring employees to join a union and pay union dues and fees in order to get or keep a job. While corrupt union leaders and incompetent automotive management nearly destroyed the Big Three Detroit car companies, the lack of organized labor in the U.S. eliminates any incentives that might exist for governments to establish ground rules for competition from foreign companies, similar to those that are in place in Germany, France and South Korea. These need to be reinstated;

3) Return to sourcing parts and components from local suppliers and manufacturing cars that will be sold in their home and regional markets (i.e., North America, Europe). These markets were once and will be in the future sufficient to keep the production wheels turning. There is a difference between supporting globalization and low- and no-tariff trade and maintaining a global balance in the ability of citizens in all countries to have employment. Worthwhile employment requires full ecosystems to design and manufacture products. Above all, do not promote and support the delivery of 'skateboards' for assembly into vehicles in the West; and,

4) Convince their governments to stop promoting battery electric vehicles until the infrastructures and ecosystems are in place to build all the components of non-ICE vehicles in the West, whether those vehicles are battery electric, hydrogen fuel cell or any other technology. These steps should be taken while it is still possible to choose to take them. COVID-19 has made it even more urgent.

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One lesson we have learned from the COVID-19 pandemic is that our world is out of balance. Everyone has felt it in one way or another, whether we have cared to admit it or not. One country, irrespective of which country it is, what its politics are or its motivations, should not be in a position to control the fate of all other countries and the people who inhabit them. One country should not control the means of production and serve as the dominant source of distribution for everything we use, not for products and services that we use on a daily basis but especially not for vital supplies that are needed in the case of emergencies. Once we have left the state of emergency in which all of us are living during this pandemic, each and every one of us, not just our governments or businesses, need to take this lesson to heart and do something positive to ensure that the world becomes balanced once again.



*This is a 'skateboard' developed by a U.S.-based company, KARMA AUTOMOTIVE that is the successor company to FISKER AUTOMOTIVE, which was founded in 2007 by Henrik Fisker to develop a plug-in hybrid. Its battery supplier, A123 SYSTEMS, filed for bankruptcy forcing Fisker to fail. FISKER declared bankruptcy in 2014. WANXIANG, a Chinese automotive components supplier, bought both companies in 2015.*





*ZENUITY's headquarters has been located adjacent to Lindholmen Science Park in Göteborg. I wrote about the new JV in the [August 2017](#) issue of **THE DISPATCHER**. The employees of ZENUITY located in this facility will be transferred to a new company owned solely by VOLVO CARS.*

## ***VOLVO and VEONEER Close Down ZENUITY***

I NEVER FELT it was a marriage made in heaven. Joint ventures between Tier Ones and vehicle OEMs rarely are. The news announcement on the 2<sup>nd</sup> of April read like a divorce settlement. Who gets custody of the kids? What happened?

Reality caught up to both VOLVO CARS and VEONEER, ZENUITY's owners. Financial analysts, Morgan Stanley, in a note to investors, said that "expectations for the launch of fully autonomous driving were pushed back significantly last year (2019), therefore it was not surprised that VEONEER will now focus just on advanced driver assistance systems (ADAS) solutions that help the driver without taking full control of the car." VEONEER could not continue to throw money at a product area where it has no customers that are ready to commercialize. VOLVO, on the other hand, still believes that "autonomous driving is a key technology for VOLVO to help the driver deliver on the promise of providing people the freedom to move in a safe, personal and sustainable way," according to VOLVO's CTO, Henrik Green.

ZENUITY's operations and around 600 current employees based in Göteborg, Sweden and Shanghai, China, will be transferred to a new company that will be formed by VOLVO CARS. This company will take over ZENUITY's current development and commercialization of so-called 'unsupervised autonomous driving software'. Staff and operations based in Munich, Germany and Novi, Michigan in the U.S. will be transferred to VEONEER and become part of VEONEER's R&D organization.

ZENUITY has reportedly been losing between \$50 and \$70 million per year since it was founded in 2017. Both companies owned equal shares in the JV. AUTOLIV, the parent of VEONEER, put in €115 million including cash and assets. VOLVO did not put in any cash but transferred intellectual property and human resources. Both companies transferred patents. It is not clear at this point how these assets will be divided. In August 2017, I wished them all the best as a couple. Now, as they go their separate ways on the highway of life, I trust they will find happiness separately.

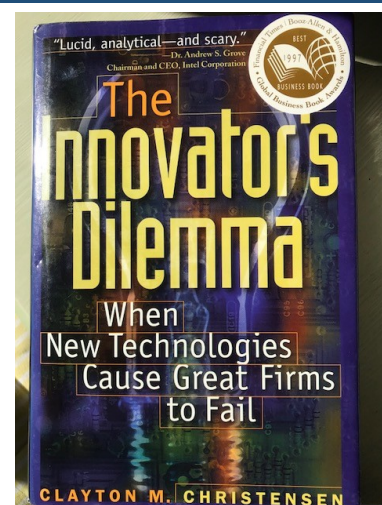
## ***Clayton Christensen Cleared Away the Clouds***

Clayton Christensen, who wrote the book on disruptive innovation, died at the young age of 67 on the 23<sup>rd</sup> of January 2020. He had been battling cancer for several years. I never got the chance to meet him, but he was one of my business heroes ever since I read his first of eleven books. He was a giant, physically (6'8"-2.03 meters) and mentally. His religion was also an important part of his persona. He was a lifelong member of the *Latter Day Saints Church* (aka *Mormon*) and held leadership positions in the church.

Christensen took a roundabout route to becoming a tenured professor at HARVARD BUSINESS SCHOOL. He grew up in Salt Lake City, the heart of the *Latter Day Saints Church*. He did his undergraduate studies at BRIGHAM YOUNG UNIVERSITY, an institution affiliated with the *Latter Day Saints Church*. He took a two-year leave of absence to perform his voluntary work as a missionary. (The church strongly encourages, but does not require members to do missionary work.) He was assigned to South Korea, and became fluent in Korean. After graduating with highest honors in economics from BYU, he earned a Masters of Philosophy at OXFORD UNIVERSITY as a Rhodes Scholar, and then took a Masters of Business Administration at HARVARD BUSINESS SCHOOL. His first job after HARVARD in 1979 was for the BOSTON CONSULTING GROUP.

In 1982, Christensen was named a White House Fellow and took a one-year leave of absence from BCG to work in D.C. He served as an assistant to the U.S. Secretary of Transportation, serving under both Drew Lewis and Elizabeth Dole. In 1984, he and several professors from MIT founded a company called CERAMICS PROCESS SYSTEMS CORPORATION, (now known as CPS TECHNOLOGIES, an APTAR company), which specializes in material science to deliver solutions that protect products. He was president and CEO through the late 1980s. That was when he decided his future was in academia. He left the company he founded and returned to HARVARD for doctoral study in business, receiving a Doctor of Business Administration degree in 1992. He immediately was asked to join the HBS faculty and set a record by achieving the rank of "full" professor in only six years.

What distinguished Christensen as a business scholar was that he understood business and he could see problems that were hiding in plain sight from the rest of us. What distinguished him as an academic scholar was that he could explain his insights in a way that was understandable to the rest of us. He cleared away the clouds and smoke so that we could apply the lessons he taught



This is my copy of [The Innovator's Dilemma](#). I purchased and read it in 1999, two years after it was published in 1997.

Christensen, Clayton M. (1997). [The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail](#). Boston, Massachusetts, USA: Harvard Business School Press. ISBN 978-0-87584-585-2.



*Clayton Magleby Christensen in 2014*

without having to hire his old employers, BCG, or its Boston competitor, BAIN & COMPANY—which was also run for a time by an LDS Church member, Mitt Romney. Why did those steel mills in Pittsburgh and Bethlehem in my home state of Pennsylvania end up as abandoned shells? How could DIGITAL EQUIPMENT CORPORATION in my adopted state of Massachusetts allow itself to be acquired by COMPAQ and then disappear? Why is it always a new company introducing the latest disk storage technology?

At first he used the term ‘disruptive technologies’, which is what appears in the sub-title of his book. He changed it to ‘disruptive innovation’ because he determined that it was not just technologies which could be disruptive. From the time he introduced the term until he left it to us as part of his legacy, he maintained that a disruptive innovation is one that satisfies a demand to a lesser degree than an existing product or service, and it does it at a lower cost. Eventually, the lower-cost, almost-as-good innovation adds more and more features until it is as good or even better than the legacy product or service, which it eventually pushes out of business. He summed up the problem of the established business thusly: What goes up, can’t go down. The infrastructure and overhead DEC required to build minicomputers was too large to compete against the lower cost structure of COMPAQ, DELL and APPLE, and eventually, networked PCs matched their performance.

He was asked a few years ago to comment on TESLA. Does TESLA match the profile of a ‘disruptive innovation’? In that case, it would have to be a top-down disruption rather than a bottom-up one. He put his research team to study TESLA in depth to answer the five basic questions they use to evaluate disruptive innovations.<sup>17</sup> The conclusion they reached was that TESLA definitely did not fit the definition of a disruptive innovation. It’s a “classic sustaining innovation”, according to Christensen’s team.

It matters a great deal to the incumbents to understand whether an innovation is disruptive or sustaining, and to know whether, in the words of the Borgs (*Star Trek*), resistance is futile, or whether there is hope to parry and attack. The question I would like to have put to Professor Christensen is how does external, governmental support for a sustaining innovation tip the scales in the newcomer’s favor? If the newcomer can set up a smoke screen and enshroud his innovation in a cloak of public welfare, can the innovation still disrupt? In the case of TESLA, that is what seems to be happening. Perhaps that would have been Christensen’s next book. It would have made interesting reading.

17. Clayton Christensen’s Five Basic Questions for Disruptive Innovation:

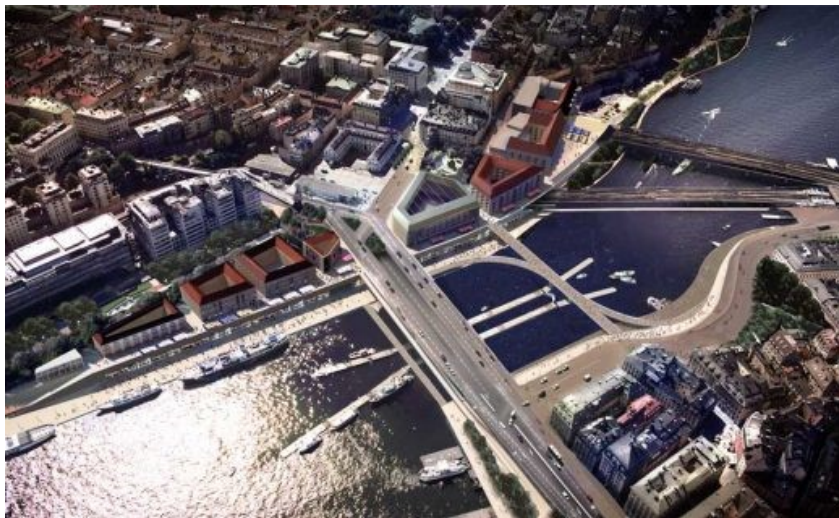
1. Does the product either target overserved customers by offering lower performance at a lower price or create a new market by targeting customers who couldn’t use or afford the existing product?
2. Does it create asymmetric motivation, meaning that while the disrupter is motivated to enter higher performance segments over time, existing players aren’t motivated to fight it?
3. Can it improve performance fast enough to keep pace with customers’ expectations while retaining its low cost structure?
4. Does it create new value networks, including sales channels.
5. Does it disrupt all incumbents, or can an existing player exploit the opportunity?



## Stockholm Gets a Mail Order Bridge

IT'S A JOKE, right? It's something the artist Christo thought up. No? You mean the City of Stockholm actually has ordered an entire one-piece bridge from China and had it hauled the entire way in a ship specially built to carry it? You're kidding! Nope, and to top it all, it's painted gold. To add irony to irony, it arrived in Central Stockholm as another visitor from the East in the form of COVID-19 had begun to close the city.

The area is called *Slussen*, meaning 'sluice'. It is where Lake Mälaren, to the right in the image below, and the Baltic Sea meet. The new bridge can be seen in the center of the collage below. It is all of eight lanes wide, two of which disappear below the deck, connecting the oldest part of Stockholm, *Gamla Stan*, seen at the bottom of the image, with South Stockholm, *Södermalm*, seen at the top. The buildings along the water on the upper side of the water with red and green roofs are all proposed structures that do not exist at present. Under the new bridge are newly-built locks which allow boats and ships to move between the two water bodies.



It all started as a competition, as many of these super-sized building projects do. The brief for the competition held in 2009 included replacing the current locks and roads and building two new connections between the two parts of the city, a pedestrian bridge and a new road bridge. The *Slussen's* roads were constructed at a time when Swedes drove on the left side of the road, as in the UK. That changed on the morning of the 3<sup>rd</sup> of September 1967. Connections to the roads on the Södermalm side were tortuous even before the driving side change due to the height differences between all of the connecting roads, as can be seen in the 1935 aerial photo in the sidebar.



*This is an aerial view of Slussen in 1935.*



*This collage shows the bridge in place looking north, back toward Gamla Stan. A sharp eye will see that the renderings don't match up on the southern side because they show the project at different stages of completion. The buildings on either side of the bridge entering Södermalm shown on the image to the left are not present in the rendering above.*

None of the short-listed designs were sensitive to the nature of the site. Neither was the original crossing, but that was no reason to continue the fault. For a city that is currently one of the most car-unfriendly of any, plopping down a super highway segment between two of the oldest remaining parts of Stockholm seems unforgivable. But once a large urban design competition begins, the jurors become enraptured by the process. They are captivated by the design's splendor, convinced of its inevitability by the architect/urban designer prophet. They will build their chosen design at any cost. It usually turns out to be as unbuildable as it is expensive. Think Sydney Opera House. In some cases, such as the Sydney Opera House, the result is worth the cost and additional years it takes to realize the design, in spite of the many compromises that are necessary along the way.

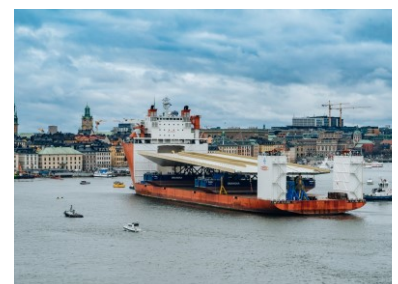
At some point someone decided the bridge just had to be built in one piece. As a lapsed architect, I know the drill. Someone says there's a problem with the selected design that makes it impossible to choose it. Someone, either the designer, in this case FOSTER+PARTNERS, or a competition committee member comes up with a most illogical solution to the problem and everyone accepts it. I looked but did not find why building a one-piece bridge had to be the only way to get the winning design built. It is not unusual to build segments of bridges off site, but constructing an eight-lane, 140-meter long bridge in one piece has to be a first. And once you decide to build such a monster, you are not going to find a firm that can do it around the corner. After an "extensive search", the company selected to build it was on the other side of the world. The construction team selected (surprise, surprise!) the CHINA RAILWAY SHANHAIGUAN BRIDGE GROUP (CRSBG), one of the world's largest steel bridge manufacturers.

The bridge on its ship had left Zhongshan, China on the 2<sup>nd</sup> of January, coursing around India's southern tip, then up through the Suez Canal, across the Mediterranean and through the Strait of Gibraltar. Rough seas kept the giant ship anchored off the coast of Portugal and Spain for nearly a month (imagine if it sank!) before it was able to continue through the English Channel, across the North Sea, around the tip of Northern Denmark, past Göteborg (once a proud ship building center), under Öresund's Bridge (which was not built in China), into the Baltic Sea and arriving, 20,333 kilometers later, on the 26<sup>th</sup> of February.

Most mail order companies allow purchasers to return goods you order that don't fit. This bridge doesn't fit. Send it back.



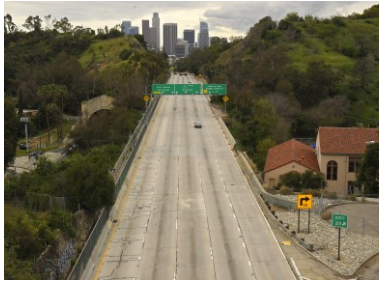
*Cranes lift the 3,500-tonne completed Slussen bridge onto pontoons at a shipyard in Zhongshan outside Hong Kong.*



*Here is the bridge arriving in Stockholm after its 20,333 kilometer journey. Gamla Stan is in the background.*



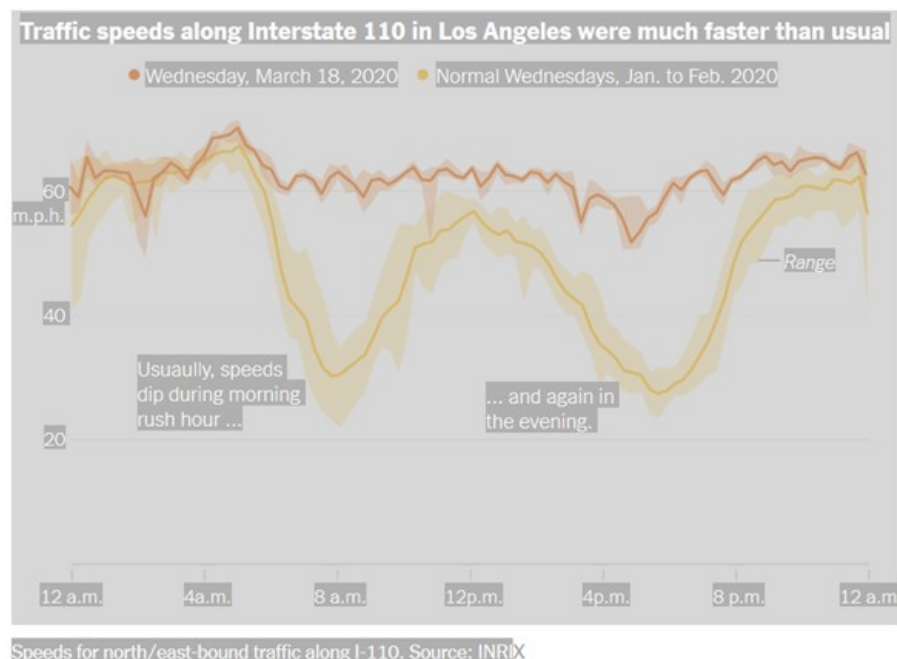
# Musings of a Dispatcher



*This is the U.S. Route 110 Harbor Freeway looking toward central Los Angeles on Friday afternoon, a time when traffic would normally be bumper-to-bumper. (Credit: Mark J. Terrill/Associated Press)*

## ***Climate change solved; just one glitch***

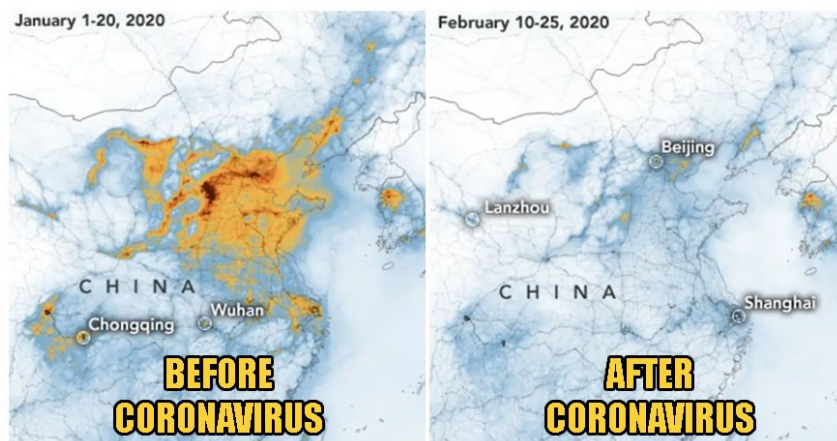
IF A PICTURE IS worth a thousand words, the graph below speaks volumes. It shows the average speed along a stretch of *Interstate Route 110* in California which runs between Long Beach directly north through the center of Los Angeles and then as U.S Route 110 (shown left) northeast to South Pasadena. The lower, yellow line in the graph indicates average twenty-four-hour speeds on Wednesdays during January and February, that is, pre-COVID-19. The upper, red line plots the speeds during the twenty-four-hour period on Wednesday, the 18<sup>th</sup> of March, after Los Angelinos were told to stay home. Normal, pre-COVID-19 average speeds are under 30 miles per hour at morning and evening rush hours. On the 18<sup>th</sup> of March, speeds dipped slightly below 60 mph only between 4 p.m. and 5 p.m. Whoever was driving at the time must have thought they were in heaven.



18. Blue Laws - also known as Sunday Laws, are laws designed to restrict or ban some or all Sunday activities for religious or secular reasons, particularly to promote the observance of a day of worship or rest. Blue laws may also restrict shopping or ban sales of certain items on specific days, most often on Sundays in the western world.

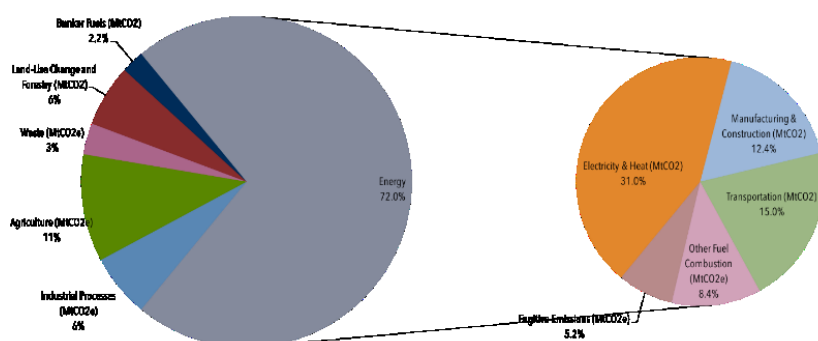
In the days when most states in the U.S. and countries in Europe had so-called 'Blue Laws'<sup>18</sup>, Sunday traffic could look like the red line in the graph. Most places have repealed those laws, although they live on in scattered locations in the form of prohibitions on sales of liquor, or, as in Pennsylvania, the sale of cars (a truly sinful activity). So these days, there is slow-moving traffic every day of the week, including holidays. Stores are always open.

With the reduction in the numbers of cars and trucks on the roads, you would expect a reduction in gases that are generated by burning fuel. One of those gases is nitrogen dioxide (NO<sub>2</sub>), which forms from emissions from vehicles with internal combustion engines as well from power plants and industries that burn coal, oil and gas. NO<sub>2</sub> is not a greenhouse gas, but it irritates the human respiratory system. Sure enough, when China began to take severe measures to stop the spread of the coronavirus by prohibiting people from leaving their homes, closing all business except the most essen-



tial, NO<sub>2</sub> levels decreased dramatically. The satellite photos above show NO<sub>2</sub> values across China from January 1-20, 2020 (before the quarantine) and February 10-25 (during the quarantine). The data were collected by the Tropospheric Monitoring Instrument (TROPOMI) on the EUROPEAN SPACE AGENCY's *Sentinel-5* satellite. A related sensor, the *Ozone Monitoring Instrument (OMI)* on NASA's *Aura* satellite, has been making similar measurements. According to NASA scientists, the reduction in NO<sub>2</sub> pollution was first apparent near Wuhan, but eventually spread across the country.

What about the big greenhouse gas, carbon dioxide (CO<sub>2</sub>)? According to an analysis carried out for *Carbon Brief*, the lockdown and reduction in economic activity in China led to an estimated 25% reduction in CO<sub>2</sub> emissions over four weeks.<sup>19</sup> It is energy<sup>20</sup> that is the largest culprit in global manmade greenhouse

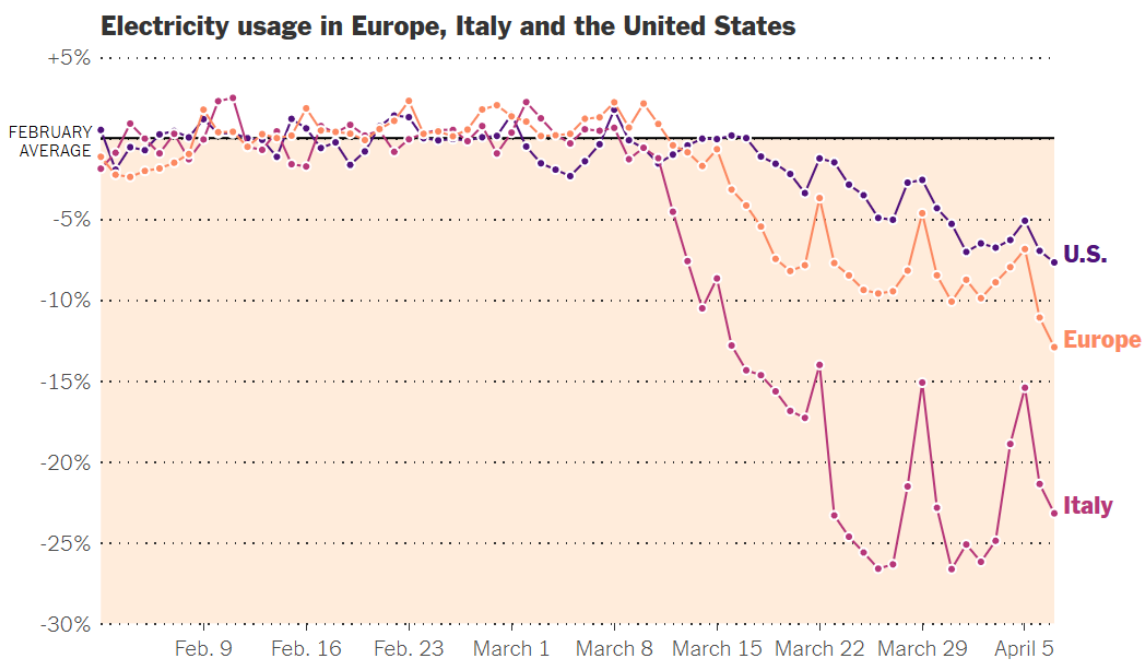


19. *Carbon Brief* is a UK-based website covering the latest developments in climate science, climate policy and energy policy. It claims to specialise in data-driven articles and graphics to help improve the understanding of climate change, both in terms of the science and the policy response. "We publish a wide range of content, including science explainers, interviews, analysis and factchecks, as well as daily and weekly email summaries of newspaper and online coverage." <https://www.carbon-brief.org/about-us>

20. <https://www.c2es.org/content/international-emissions/>

gas emissions, accounting for 72% of the total, and it is the electricity and heat sector, not transportation, that is the largest emitter in that segment, throwing out 31% versus 15% for transport. (See chart above.)

If measures of electricity usage are an indication of a reduction in CO<sub>2</sub> reductions, then the major drops of usage around the world should have resulted in equivalent drops in CO<sub>2</sub>. Electricity usage has dropped significantly in Europe and the U.S. In the U.S., electricity usage began dropping around the time that lockdowns started. By the 8<sup>th</sup> of April it was down by close to 8%. New data on electricity use in the past three weeks published in the *NEW YORK TIMES* suggest a sharp decline in U.S. economic activity on par with that of the Great Recession. “It may already be the deepest downturn since the Great Depression; it is certainly the fastest,” stated the *TIMES*. Europe was down by 13% and Italy alone had reduced usage by fully 23%. In Italy, usage had been down even farther, to 27%, at the end of March.



Source: European Network of Transmission System Operators for Electricity

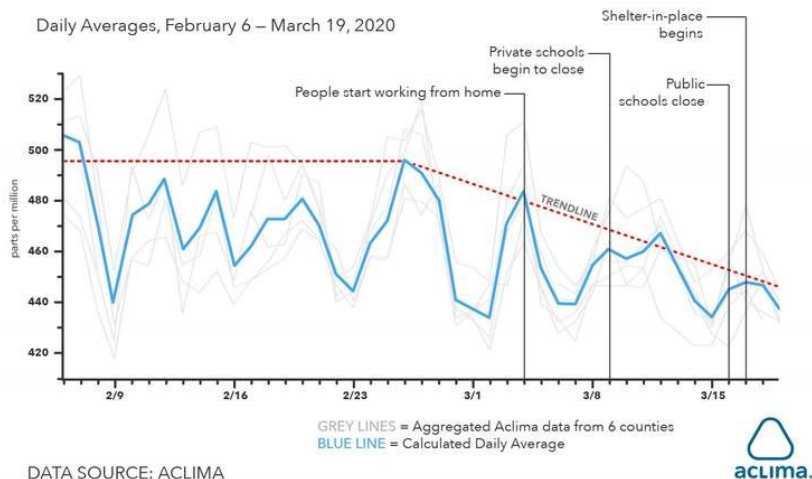
Source: *New York Times* 8 April 2020.

CO<sub>2</sub> is indeed down. *Carbon Brief* reported that CO<sub>2</sub> emissions were down in China by an estimated 18% between early February and mid-March due to falls in coal consumption and industrial output.<sup>21</sup> After taking block-by-block measurements at the county level in the San Francisco Bay Area from Feb. 6 to March 19 and averaging the data, the company ALCIMA plotted the trend

21. That slowdown caused China, the world's largest emitter, to avoid some 250 million metric tons of carbon pollution—more than half the annual carbon emissions of the United Kingdom.

of CO<sub>2</sub>. It showed that it declined in a similar way as NO<sub>2</sub>, resulting in a 10% decrease in CO<sub>2</sub> levels as shown in the graph below.<sup>22</sup>

## San Francisco Bay Area Carbon Dioxide Levels



22. ALCIMA is a company. It networks stream “millions of data points per day to its cloud-based software tools, providing a picture of the air around us.” This gives users the critical information they need to diagnose and reduce air pollution and greenhouse gas emissions. ACLIMA’s suite of software products “translate complex data into tools to drive action.”

Then there is air travel, which has fallen like a lead balloon. The major airline for Sweden, SAS, stopped most of its international flights in late March. By mid-April, 95% of its capacity was unused. Most airlines around the world shut down as well. Initially, the airlines were reacting to restrictions on entry of foreigners set up by many countries. Within a few short days, travel bans within countries made any thoughts of non-essential travel unthinkable, so demand disappeared. SAS was ordered to keep certain domestic flights operating for security purposes. The global aviation industry produces around 2% of all human-induced CO<sub>2</sub> emissions and only 12% of the CO<sub>2</sub> emissions from all transport sources. It has an average occupancy of 82%, much greater than all other forms of transport, but because certain climate activists have a fear of flying, air travel has been singled out for climate shaming. Now, no one can fly even if there was some place to go.

### Be careful what you wish for

It could well be said that with COVID-19, everyone who has been hoping and praying that global warming could be halted have finally gotten their wish. Without anyone voting or legislators passing legislation, COVID-19, also known as ‘Corona’ meaning ‘crown’, a symbol for ultimate power, has caused the equivalent of the Red Sea to part, transforming by a silent decree all days into Blue Law Sundays. All the various climate accords’ goals, from

Kyoto to Paris, that have seemed unachievable for decades have been met over the course of a few months.

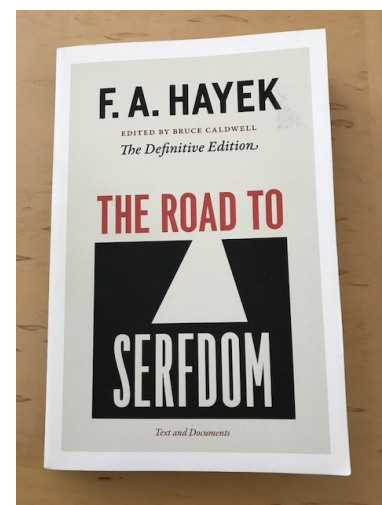
No one, of course, is popping champagne corks. Virus-related deaths continue to increase everywhere, and the societies at the lowest rung of the economic ladder that will be most negatively affected by climate change will experience the worst economic effects of the virus. But it does show what can happen when someone—or something—with authority takes decisive action when inaction has dire consequences.

When I thought about this, I was reminded of an argument in Yuval Noah Harari's book, **21 Lessons for the 21<sup>st</sup> Century**, that there will be individuals, organizations and, above all, politicians, who will say that solving the problem of global warming is beyond the abilities of the majority of individuals to understand, and beyond the capabilities of democratic country governments, acting on their own, to affect. They will suggest that there needs to be a strong, global authority that can take actions that no single country that depends on consensus of voting citizens seems to be able to take in order to keep temperatures from rising to levels where bad things will happen to life on Planet Earth.

There are plenty of precedents for such thinking. Totalitarian governments are most often formed in the wake of existential threats, either from within or without. Dictatorial leaders claim that only through central control and expert planning can the threats be averted. F.A. Hayek, writing in the U.K. in 1944, when the war against the ultimate totalitarian state still raged, devoted his book, **The Road to Serfdom**, to the refutation of what he calls 'Collectivism' and central planning.<sup>23</sup> Collectivists include Socialists, Communists, Fascists, Nazis and other types of dictatorships. They claim that free individuals can never be trusted to carry civilization forward. He quotes Mussolini claiming first prize as the millennium's dictator:

*"We were the first to assert that the more complicated the forms assumed by civilization, the more restricted the freedom of the individual must become."*

Hayek reserves a special place in his narrative for Britain's Socialists. Near the end of World War II, as the Labour Party in the U.K. prepared to wrest the government from the Conservatives and Winston Churchill in order to try their hand at quickly rebuilding



23. This book, which was recommended to me by a cousin, a retired surgeon, who is taking a course in the philosophy of politics and economics, should be compulsory reading for anyone running for any office in any country claiming to be a Democracy. It helps to explain why Sweden is not forcing its citizens to stay indoors as other countries that do not have the same legal basis as Sweden are doing. Sweden is a Liberal Democracy and its laws forbid it to restrict the freedom of its citizens.



the country ravaged by five years of war, H.J. Laski, an English political theorist, economist and rabid Socialist, who was chairman of the British Labour Party during 1945-46, wrote in an article:

*"It is common ground that the present parliamentary machine is quite unsuited to pass rapidly a great body of complicated legislation. A Labour Government would confine the House of Commons to the ventilation of grievances and the discussion of general principles. Its Bills would take the form of general formulae conferring wide powers on the appropriate government department. Delegated legislation is inevitable if the process of socialization is not to be wrecked by the normal methods of obstruction which existing parliamentary procedure sanctions."*

Hayek made even clearer Laski's point that a Socialist government should not allow itself to be fettered by democratic procedure with this unanswered question from Laski at the end of his article quoted above "...whether in a period of transition to Socialism, a Labour Government can risk the overthrow of its measures as a result of the next general election." It seems that the U.K. only just managed to escape the replacement of its Rule of Law by a central authority and ad hoc Socialist government.

War terminology has been used to muster support to solve all types of intractable problems: war on drugs; war on crime; war on poverty; war on climate change; and, most recently, war on COVID-19. *"We are in a war that we must win. This is a battle that cannot be lost. We must attack the enemy with all our might."* To limit the spread of the virus, countries have been competing with each other on taking strong action, particularly by closing all businesses and schools, stopping all public transit, forcing citizens to stay indoors, wearing face masks, submitting to spot temperature checks, carrying papers stating whether they have had the virus, and not traveling. This is all done in the name of saving lives, and citizens in places that are considered highly democratic, like France and Norway, comply with measures that their governments have decreed as necessary.

Imagine if governments applied the same strong measures to climate change as they have with COVID-19 to achieve what have been collateral results in the war against the pandemic, that is, reduction in emissions that are causing climate change. Harari took up this theme at the 2020 World Economic Forum in Davos.<sup>24</sup> He said in his lecture: *"We have built the rule-based liberal global*

24. <https://www.weforum.org/agenda/2020/01/yuval-harari-warning-davos-speech-future-predictions/>

*order, that despite many imperfections, has nevertheless created the most prosperous and most peaceful era in human history.”<sup>25</sup>*

He warned again in his talk that political leaders will seize the opportunity of a crisis, like the threat of climate change, to grab more power than what their current laws allow. We have seen this already with COVID-19 in Hungary<sup>26</sup> and to varying degrees in many other countries where citizens have been ordered to give up their freedom of assembly to ‘combat’ the spread of the virus.

Sweden has been singled out as a country that is going its separate way with how it is controlling the spread of COVID-19, and it has received not a little attention amongst its partner countries within the EU. The President of the United States, during his daily pandemic press briefings, seems to delight in comparing the U.S. to Sweden, stating that if the U.S. had followed Sweden’s examples, practically no one would be left alive in the country. Sweden has not told its citizens that they will be fined if they are caught walking (or running) in the streets. It has not closed its stores, restaurants and cafes. It has not closed its child nurseries and grade schools (although high schools and universities are shut down). Nevertheless, almost all non-essential manufacturing facilities have closed. Scania, Volvo Cars and AB Volvo have indefinitely laid off a combined total of 54,000 people.

A journalist from a northern European country assigned to Sweden kept asking the Prime Minister at the end of each press briefing during the first two weeks of the country taking emergency measures why Sweden was not practicing lockdown as his home country and most other countries were doing. The Prime Minister said simply and patiently each time the question was asked: “Our laws do not allow it. We depend on the people taking responsibility for themselves and for others.”

This Liberal philosophy that permeates all layers of Swedish life seems to be a very difficult concept to grasp for people who are raised in countries where democracy is relatively new or in which democracy means that you vote in elections and the majority get their way. In Sweden, somewhat frustratingly for non-Liberals, you vote in elections to know what the minority’s opinions are and then you ensure that whatever you do you respect their opinions and their rights.

Climate activists know that once COVID-19 abates, NO<sub>2</sub> and CO<sub>2</sub> will be back at the pre-virus levels. Traffic congestion and electricity usage and maybe even air travel will rebound quickly, as they

25. Harari uses the term ‘liberal’ in the same sense Hayek and Locke use the term, spelled with a capital L, not in the American sense of social liberalism. Locke believed that people had natural rights to “life, liberty, and property”, and that the role of government was to preserve these rights. If a government does not do so, then the people have a right to change their government.

A Liberal government’s power is limited and justified by the solemn pledge to:

- treat individuals with respect,
- pass laws that more effectively guarantee individual freedom and liberty, and
- avoid unreasonably infringing upon these liberties.

26. Hungary, which has been dismantling checks and balances on the executive for a decade, passed a covid-19 emergency law that gives Viktor Orban the power to rule by decree as prime minister. The opposition says the country has become a dictatorship. But the EU did not criticise Hungary by name, and the European People’s Party, the EU-level group that includes Mr Orban’s Fidesz party, made no move to expel it.

(Source: April 2<sup>nd</sup> 2020 *THE ECONOMIST*)

have always rebounded after crises and catastrophes in the past. They have been very quiet while the pandemic has raged. It would hardly be appropriate to declare victory while so many people in all corners of the world are dying and suffering, while so many people who live on the edge of poverty are now without work and without a means to feed themselves and their families. There have been calls to use the support money to build into the economy climate-positive projects and to apply the controls that have been put in place for forcing through tighter restrictions on how we live and work, but these calls will be ignored as governments attempt to start their countries' wheels turning once again and do what they can to help their stock markets claw their way back to where they were before the pandemic started.

Comparisons have already started to be made between how China dealt with what started as an epidemic—after it admitted that it had an epidemic—and how Western countries reacted once the virus breached their borders. China is held up as an example of how to get things done. We should learn from them, we are told, especially by China. “Look at how quickly they have gotten people back to work.” Look at TESLA, it's selling record numbers of cars in China while its factory in the U.S. sits idle. It is not rocket science to lock everyone up, pull out anyone that develops the virus and then unlock the doors when people stop dying. I, for one, would prefer to prioritize learning how to prevent pandemics from starting, rather than on stopping their spread.

Maybe at some point all of us are going to have to choose sides in a global plebiscite. Do we want to live in a world in which our movements and choices are dictated by a centralized authority that has the power to plan for everyone on the Planet what we shall do and how we shall do it, a central authority that has been given its mandate to save us all from all catastrophic disasters forever? Do we want to turn over willingly to such a central authority the power to save humanity from the perils of pandemics and climate change in return for giving up our freedom (as Hayek warns against)? Or do we want to live in a world in which each individual, in his or her own way, will find the means to preserve humanity while also preserving the individual freedoms that those who came before us fought so hard to obtain? I know which one I will vote for as long as I have the right to choose. Unfortunately, in such a plebiscite, if my side loses, I can be sure that my opinions won't be worth much in whatever future I would experience during my remaining time on Earth.



*“Now we must return briefly to the critical point—that individual freedom cannot be reconciled with the supremacy of one single purpose to which the whole of society must be entirely and permanently subordinated. The only exception to the rule that a free society must not be subjected to a single purpose is war and other temporary disasters when subordination of almost everything to the immediate and pressing is the price at which we preserve our freedom in the long run. This explains why so many of the fashionable phrases about doing for the purposes of peace what we have learned to do for the purposes of war are so very misleading: It is sensible temporarily to sacrifice freedom in order to make it more secure in the future; but the same cannot be said for a system proposed as a permanent arrangement.”*

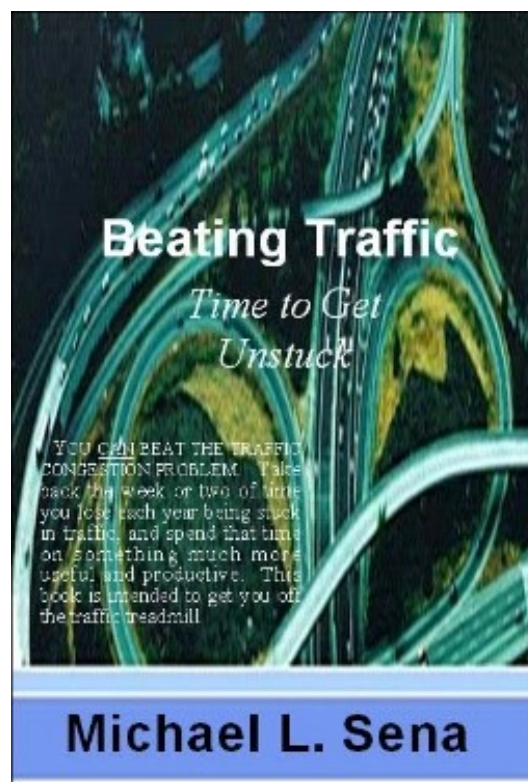
F.A. Hayek

**The Road to Serfdom**

## ***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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