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Telematics Industry
Insights by
Michael L. Sena

THE DISPATCHER

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THE DISPATCHER

Telematics Industry Insights by Michael L. Sena
May 2019 – Volume 6, Issue 7

OEM De-fossilization and Automation Programs III

THE AUTOMOTIVE INDUSTRY is in the throes of wrenching changes. These changes eventually will alter the way we build, buy and use vehicles. They will redefine all the services which these vehicles provide to their drivers and passengers as well as the services that are provided to the vehicles.

*In the February issue of **THE DISPATCHER** I gave a summary of what BMW, DAIMLER and VW have announced as their short-term program to meet their stated long-term goals. In the March issue I looked at FIAT, FORD and GM. In this issue I look at the **British car industry**. My objective is to try to determine which companies are likely to still be around in ten years, which companies will find it necessary to merge with rivals or allow themselves to be absorbed into businesses that have business models better adapted to the direction the world seems to be taking with mobility, and which companies are likely to just go away.*

MY 1970 FORD CORTINA ESTATE pretty much sums up the condition of the British car industry just prior to the UK entering what was then called the European Economic Community (EEC).[1] This humble vehicle also offers a glimpse into

what the future would hold for that industry. I bought it for $2,000 at a Ford dealership in New Jersey at the end of the model season in August, 1970. It was my first and, to-date, last FORD; it was my first and, also to-date, last British-made car. The *Cortina* was a great car for the first year, it was a nightmare for the second, it was on blocks in a

1. The European Economic Community (EEC) was a regional organisation which aimed to bring about economic integration among its member states. It was created by the Treaty of Rome of 1957.[2] Upon the formation of the European Union (EU) in 1993, the EEC was incorporated and renamed as the European Community (EC). The United Kingdom (England, Scotland, Wales and Northern Ireland), along with the Republic of Ireland and Denmark, joined the EEC on 1 January 1973.

New Jersey barn for the third while I was living and working in London, and when I returned and drove it up to Cambridge, Massachusetts in 1973—its second-to-last trip under my direction—it became someone else's problem. I sold it to an MIT undergrad. In the *Cortina*'s second year it developed a strange habit of suddenly losing all electrical power and simply stopping dead in its tracks. I would drive it at night and the lights would begin to dim. I would turn off the lights and drive it blind until I got home. No mechanic, neither at the Ford dealer where I bought it nor an independent, could find the problem. "It's an electrical short," the dealer's mechanics would say, "but we don't know how to fix these foreign cars." *Then why did you sell it to me?* "Why did you buy it?"

British Car Industry Begins Rolling Downhill

Why did I buy it? Why do we buy cars of any make or model? After owning two motorized skateboards (VW *Beetles*), I thought it was time for car that had a heater and fuel gauge, could take a relatively steep incline if I had a passenger in the car with me, and had enough space to carry at least two suitcases. What was on offer in the U.S. at the time were cars that were at least a third larger and at least a third more expensive. The *Cortina* fit all of my criteria, including good, clean design. The only problem was that it was unreliable, just like the rest of the cars produced in the U.K. at the time. I wasn't alone among family and friends who had also bought British who at times wanted to do exactly what John Cleese did to his '67 *Austin 1100 Countryman Estate*, give it a good thrashing.

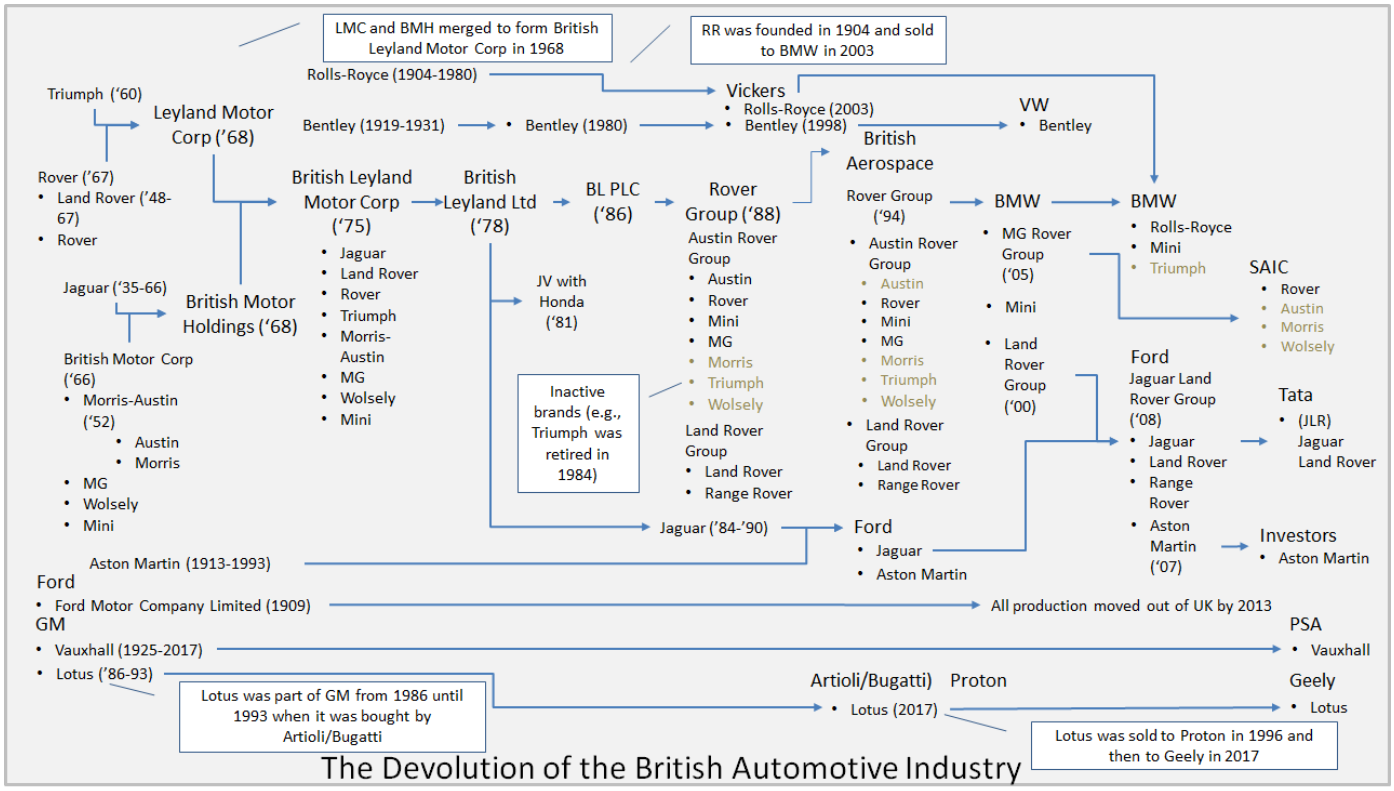
Basil Fawlty's car, which received "a damn good thrashing" in the 'Gourmet Night' episode of BBC Comedy Fawlty Towers (1975-1979), was a 1967 Austin 1100 Countryman (estate). It simply stopped running at a very inopportune time and a very inappropriate place, causing Basil to blow a gasket.

https://www.youtube.com/watch?v=mv0onXhyLlE

Consolidation of the British vehicle manufacturers began in the 1960s. There were quite a number of companies back then and keeping all of them straight in my head as I read about their trials and tribulations proved to be an impossible task. So I decided I needed to diagram them to see where they all fit together into the narrative. It was a tedious exercise to try to understand the evolution (more devolution than evolution) of the industry during the past seventy years, but when I finally was able to see the pieces of the puzzle falling into place, I felt the time was well spent. The main groups are arranged in chronological order from the left to the right through the center of the diagram beginning in the 1960s.

In 1968, two companies were formed by the merger of most of the principal vehicle manufacturers in operation at the time, LEYLAND MOTOR CORPORATION and BRITISH MOTOR HOLDINGS. These two companies were then merged in 1975, forming BRITISH LEYLAND MOTOR CORPORATION. ROLLS-ROYCE, ASTON-MARTIN, FORD and VAUXHALL were out-

side of this company, but most of the others were in. It was effectively nationalized in 1975, the year after Harold Wilson and his Labour Party took over government from the Conservatives who had led the government for the previous four years with Ted Heath as Prime Minister.



The Devolution of the British Automotive Industry

I lived in London in 1972 and 1973 when Heath was Prime Minister, and I distinctly remember that the auto industry along with most of the other manufacturing, extraction, teamsters, dock workers, construction workers—anyone who belonged to a union—were constantly on strike. At the same time there was the ever-present threat of an IRA bomb going off somewhere in the city. It seemed that Great Britain was fighting on two fronts, against the labor unions and against the IRA in Northern Ireland. The U.K. had joined the EEC in 1973 (after their application had been denied twice in the '60s at the urging of Charles de Gaulle, who was President of France at the time). The country was now open for competition from cars produced on what the British still call 'The Continent'. Add in the Oil Crisis of '73, high inflation, recession from '73 to '75, and the table was set for industrial disputes.

There are many other British car companies that are not included in the diagram above, Sunbeam and Morgan to name two.The main purpose of the diagram is to trace the history of those car companies that remain in operation.

In April 1975, the Ryder Report[2] on the state of BRITISH LEYLAND MOTOR CORP. was presented to the new Labour government. One of its recommendations was to create a new holding company, of which the government was the major shareholder. BRITISH LEYLAND LIMITED (BL) was created in 1978 and its shares were vested in the National

2. The Ryder Report was the official report produced for the Government of the United Kingdom in 1975 by Sir Don Ryder, newly appointed head of the UK's National Enterprise Board who was given the task of reporting on the British Leyland Motor Corporation and listing recommendations for its future.

Enterprise Board, which had the responsibility for managing the investment. The British government was now in the automobile business.

BL PLC was renamed ROVER GROUP by 1988 when it was sold to BRITISH AEROSPACE (BAE). There were two main events that happened before that sale. One was a joint venture between BL and HONDA in 1981 which lasted until 1994 when the ROVER GROUP was sold to BMW. This saga could fill all the pages of this newspaper and more. Here's the shortened version. At the end of the 1970s, ROVER was in need of a business and technology partner. It approached HONDA, and the two companies agreed that ROVER would produce a HONDA-designed model under license and sell it under the ROVER name. The *Triumph Acclaim* was the result. Based on this experience, the two companies decided in 1981 to jointly develop a new model. The *Honda Legend* and *Rover 800* were launched in 1985 and 1986. As part of its privatization plan, the government decided to sell ROVER to BRITISH AEROSPACE in 1987. Collaboration continued, and in 1990, the two companies took a 20% stake in each other. In 1993, BRITISH AEROSPACE informed HONDA that it was interested in selling all of ROVER. A preliminary agreement was reached in which HONDA would increase its stake in ROVER to 47.5%, with BAE keeping 47.5 and 5% would be given to ROVER management. Shortly after this deal was reached, BAE announced it would sell ROVER in its entirety to BMW. And this is how BMW acquired the Mini. It sold LAND ROVER to FORD in 2000 and MG ROVER to SAIC in 2005.

A 1987 Rover 827 Sterling. You've seen them and perhaps wondered how a Honda got a Rover badge.

The second event was the spin-out of JAGUAR in 1984 and its listing on the London Stock Exchange. Margaret Thatcher had become Prime Minister in 1979, a position she would hold until 1990. Hers would be a period of privatization.

Wanted: Knights on White Horses with Cash

JAGUAR was founded in 1935 in the middle of the Great Depression. It evolved out of a company that made side cars for motor cycles. It was called S.S. CARS LTD and made cars under the brand name SS Jaguar. It wasn't until 1945 that it adopted the name JAGUAR CARS LTD. *Grace, Space, Pace* was its motto for its stylish sports cars. It won the *Le Mans 24 Hours* race in 1951, '53, '55-57. It made great cars, but they were not always of the best quality. The company lacked the resources to invest in production and advanced engineering, and by 1966 it was folded into BRITISH MOTOR HOLDINGS and then became part of the BRITISH LEYLAND club. It had six years of freedom to find its financial footing, but it was skidding badly

Jaguar S-Type based on the Ford DEW98 platform. Low point? The rebadged Mondeo was around the corner.

when FORD cast its headlights on it. Why did Jaguar allow itself to be acquired by FORD in 1990? Actually, it didn't. FORD paid around $2.5 billion to acquire the company's shares in the U.S. and UK from its shareholders. FORD believed it needed a luxury brand to rival BMW and MERCEDES-BENZ. It lost its chance to buy ALPHA ROMEO to FIAT, and chose JAGUAR over SAAB, another company it was stalking. So it was really a hostile takeover. By all accounts, JAGUAR probably would not have survived if it had not been bought.

ASTON MARTIN takes its name from one of the two founders, Lionel Martin, and from the place where Martin raced cars, Aston Hill near Aston Clinton. It was founded in 1913 and produced its first car in 1915. Its history was one of running out of money. Between 1967 and 1987, the company produced only 5,000 cars. In 1987, FORD bought a piece of the company and by 1991 had agreed to take over the company completely. In 1994, FORD opened a plant in Bloxham (north of Oxford) to build the DB7 featuring a JAGUAR AJ6 six-cylinder engine. More than 7,000 were built before it was replaced by the DB9 in 2004. When FORD dismantled its PAG, ASTON MARTIN was sold at auction for £475 million to a group of investors led by Prodrive chairman David Richards. ASTON MARTIN LAGONDA GLOBAL HOLDINGS PLC went public on 3 October 2018.

The two big—as in large size cars—luxury brands, ROLLS-ROYCE and BENTLEY, went to respectively BMW in 2003 and VW in 1998. ROLLS-ROYCE is one of Britain's oldest car makers. Charles Rolls and Henry Royce met in 1904 in Manchester and decided to pool their resources. ROLLS-ROYCE LTD was established in 1906, and they set up their production facilities in Derby. It started making airplane engines during WWI, and from that point on it was both in the luxury car business and the aerospace business. In 1971 it went into receivership and was bought by a government-owned company named ROLLS-ROYCE (1971) LTD. Car operations were separated out from aerospace and established as ROLLS-ROYCE MOTORS LIMITED. A public flotation failed, and in 1980, it was merged with VICKERS, and in 1987 it was fully privatized when the government sold all of its shares.

This is when things get complicated. In 1998, BMW was licensed the rights to the ROLLS-ROYCE brand name and logo from ROLLS-ROYCE PLC. At the same time, it acquired the rights to the *Spirit of Ecstasy* and ROLLS-ROYCE grill shape trademarks from VOLKSWAGEN AG. Since 2003, ROLLS-ROYCE MOTOR CARS LIMITED operates from purpose-built administrative and production facilities across from the historic Goodwood Circuit in Goodwood, West Sussex. ROLLS-ROYCE

DAIMLER was also a JAGUAR brand. It's not that other Daimler of Daimler-Benz or Daimler AG. It's Daimler of Britain, which originally made cars using Gottlieb Daimler's engines. So if you see cars that look like Jaguars, but with the Daimler logo on them, now you know why. The last one sold was a re-badged Jaguar called a Daimler Super Eight.

The 1994 Aston Martin DB7

Rolls-Royce Spirit of Ecstasy hood ornament.

MOTORS CARS LIMITED is the exclusive manufacturer of ROLLS-ROYCE branded motor cars since 2003. Although the ROLLS-ROYCE brand has been in use since 1906, the ROLLS-ROYCE MOTOR CARS subsidiary of BMW AG has no direct relationship to ROLLS-ROYCE branded vehicles produced prior to 2003. The BENTLEY MOTORS LIMITED subsidiary of Volkswagen AG is the direct successor to ROLLS-ROYCE MOTORS and various other predecessor entities that produced ROLLS-ROYCE and BENTLEY branded cars between the foundation of each company and 2003, when the BMW-controlled entity started producing cars under the ROLLS-ROYCE brand.

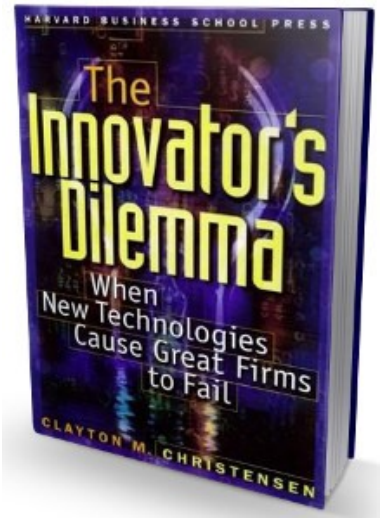
BENTLEY was founded in 1919 by W.O. Bentley, and for the next twelve years he made big, fast and expensive motor cars. When the Great Depression hit, the company went in to receivership. It was sold to British Central Equitable Trust in 1931. The Trust was a front for ROLLS-ROYCE. Financial problems led to its sale again in 1980 to Vickers. It was sold to VW in 1998, where is has remained to-date.

We do so want to see them succeed, don't we?

The Brits make beautiful cars, you have to give them that. An ASTON MARTIN DB11 is a dream. JAGUAR, LAND ROVER and MINI all make cars we would love to own and drive. The companies under their new owners have done a good job of improving quality. It's just that infernal business with making money that keeps mucking up the works. JLR had been on a roll since 2012, but then worries over Brexit, talks of tariffs in China and belt tightening by the Chinese government caused Chinese buyers to stop buying expensive foreign cars. JLR saw its China sales halved in the fourth quarter of 2018, and TATA posted its largest ever quarterly loss in its history, $4 billion. Global sales for JLR were down 11% in January.

In my imagination, motor cars and Britain go together, like bangers and mash, fish and chips, bubble and squeak. It's not an image of James Dean and drag racing on a summer night that I see, or a Beemer bearing down behind me, flashing its high beams speeding along an autobahn, or a VOLVO estate pulling a camper through wooded roads. It's Lady Valentine in her 1929 ROLLS-ROYCE with her trusty chauffeur at the wheel, or Mr. Bean steering his lime green MINI from its rooftop while sitting on an armchair he has purchased, or the suit of armor being driven home from the *Antiques Road Show* through the Cornish moors, looking for all the world like a robot. It's a 1965 MGB GT in British Racing Green. It's quirky cars and quirkier drivers, drivers who look happy and proud to be behind the wheel of a British motor car.

Where Hidden Value Lurks in the Car Industry

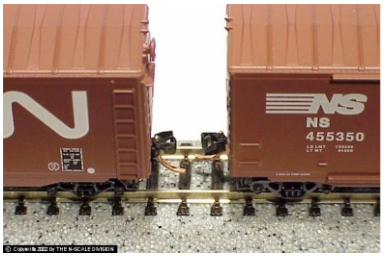


HARVARD BUSINESS SCHOOL has been the center for *Disruptive Innovation* ever since 1997 when Clayton M. Christensen, a professor at the School, released his seminal book, **The Innovator's Dilemma**. In this book he explained how less expensive, easier to understand and use products and services can catch large companies by surprise and even threaten their very existence. During the past twenty-two years, Christensen has not stopped innovating and disrupting himself, and he has decided that he didn't have it completely right when he wrote **The Innovator's Dilemma**. In 2016 he wrote a new book titled **Competing Against Luck** in which he introduced the theory of 'Jobs to be Done'.

"I realized that historically, innovation seemed to have been unpredictable, almost like a role of the dice," explained Christensen. "It didn't seem right that innovation should be a crapshoot. Then I realized that what causes innovation to appear unpredictable is that at business schools, we have taught people that 'understanding the consumer' is the right unit of analysis. What you need to understand is rather that each and every day, things happen to us. Jobs arise that have to be done. 'Understanding the job' is the right unit of analysis, not understanding the consumer.[3]

3. Susan Adams, *Clayton Christensen on What He Got Wrong About Disruptive Innovation*. FORBES TREP TALKS. (October 3, 2016).

The needs of consumers change from day to day. They are unpredictable, to a large extent, explained Christensen. Jobs are more predictable, but jobs do not only have a functional dimension; they also have a social and emotional dimension as well, and these are often as important as the functional, and sometimes they are more important. He says that focus groups are not the best way for existing companies to generate innovative ideas. "You have to understand the context where people need to get jobs done. Companies should focus on context."



Decoupled Freight Cars

Decoupling the Customer Value Train

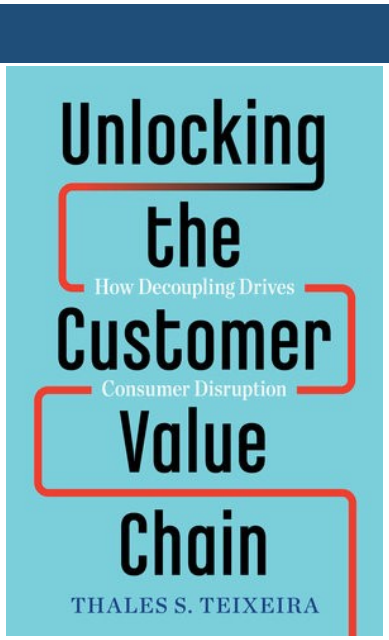
Thales S. Teixeira is also a professor at HARVARD BUSINESS SCHOOL where he teaches Digital Marketing Strategies, Ecommerce and Disruption Models. Eight years ago he made his first visit to a digital start-up, FACEBOOK. That experience started an eight-year research project that ended up in a book titled **Unlocking the Customer Value**

Chain: *How Decoupling Drives Consumer Disruption*. He visited most of the best-known start-ups, including Uber, Airbnb and Twitter. All of them said they were doing something unique, but what he found was that they were all doing the same thing, that is, decoupling one or more of the four stages of buying a product or service:

- Evaluation
- Selection
- Purchase
- Use

In the traditional product or service purchasing model, the first three stages occur in a single place, such as a clothing store or sporting goods store, for example, or at a car dealership. All four steps comprise the Customer Value Chain, and decoupling (or unlocking) them allowed the disrupter companies to develop new business models, discovered Teixeira. Here's an example. In the era of regulated taxi service when, in some cities like Stockholm, there was only one taxi company, the customer could only purchase and use the service. There was no evaluation or selection. UBER, LYFT and other ride brokers decoupled all of the traditional taxi company stages (i.e., buying and maintaining cars, operating a dispatch center, hiring drivers, managing payments, dealing with customer complaints, paying fines, etc.). With their platforms and mobile apps, any person with a car and a driver's license could pick up customers needing a ride. Both drivers and riders used the mobile apps to conduct all of the stages of buying a service. Neither drivers nor riders were restricted from using the services of any of the ride brokering companies, and the evaluation of both customers and drivers of their experience informed future purchases.

What companies compete on, whether they are traditional or disrupters, is ***customer value***.[4] Teixeira says that new entrants gain market share if they can offer customers a lower cost, greater convenience or better quality for the price. This is the *Customer Value Triad* described in the sidebar. In the traditional model, you usually get to choose only two out of three, but by decoupling, it is possible to improve



4. Customer value is the incremental benefit which a customer derives from consuming a product after paying in return. The term value signifies the benefits that a customer gets from a product. It is the difference between the benefits (sum of tangible and intangible benefits) and the cost. Customer value is dependent on the three factors – Quality, Service and Price. Hence, these three together form the 'Customer Value Triad'. The value of a product increases with its quality and service, as the benefits increase. On the other hand, the value decreases with increase in price because of the increase in costs increase in this case. https://www.mbaskool.com/business-concepts/marketing-and-strategy-terms/1816-customer-value.html

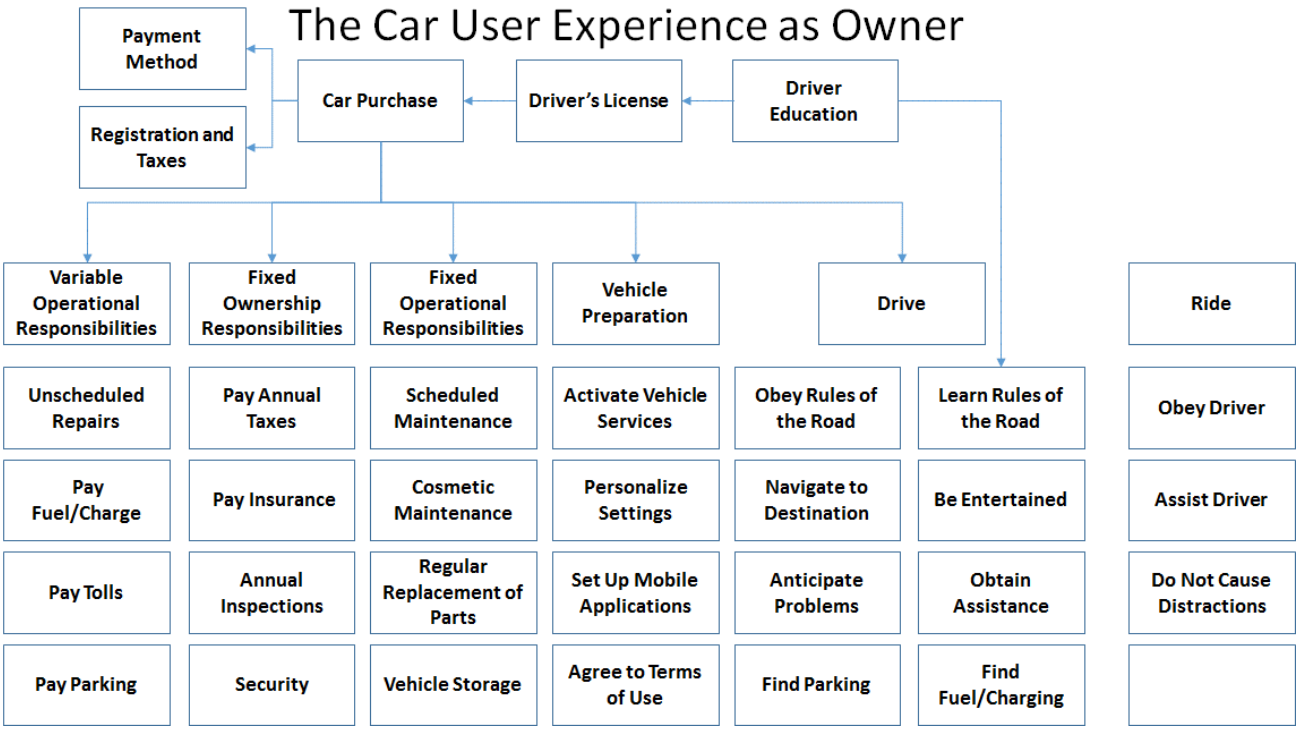
on all three simultaneously. This is what UBER and LYFT have done with ride brokering. The companies have improved service (you book, pay and evaluate on one app and see where the driver is at all times), improved quality (drivers are encouraged have spotless cars) and lowered costs to the customer.

The other three customer value components, social factors, marketing and past experience, are the **context** that Christensen refers to. Products and services do not exist in a vacuum, as UBER learned when it tried to extend its model into China or as AIRBNB is learning from its experience in Paris.

The only limit to innovation is imagination

FOCUS ON THE JOBS that need to be done. One job that everyone needs to get done every day is nourishing the body. There are restaurants of all types, grocery stores and super markets, food trucks and drive-through fast food chains to help us get this job done.[5] All of these require a connection between the person wanting food and the outlet providing it, either in fully prepared form or as raw materials. Home delivery, starting with pizza and moving up to full meals, decoupled the job of obtaining nourishment with the process of obtaining food. Someone is probably already offering after-meal clean-up service where the dishes magically disappear. The next step will be ordering the food you like to eat in a restaurant where you really enjoy eating, but don't particularly like the food or its prices. That will really be decoupling.

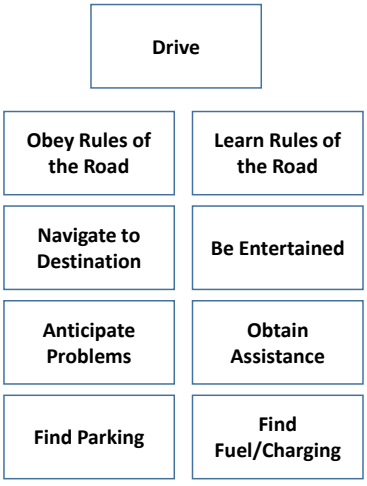
5. The very wealthy have never had to concern themselves with how their food arrived on the plates placed before them at every meal, just as they did not have to worry about how they were delivered from their doorstep to wherever they needed to go: the chauffeur did that job. In the same way as Uber delivers a chauffeur, Uber Eats delivers the kitchen and the cook.



The car does many jobs, which is why we purchase them and have them ready when we need them. They take us and our family and friends to places where we need to go. They are used to carry things that we would otherwise have to pay someone else with their form of transport to carry for us. They enable us to live in places where we would not be able to live without a secure means of transport. But owning them comprises many jobs, as the diagram above clearly shows. Well, why not just decouple ownership from use with long-term car rental or car sharing or even offer a subscription?

It turns out that subscribing to a car takes almost none of the work out of having full-time access to a car. It eliminates the annual tax payment, annual inspections (where they are required) and paying for car theft. The subscriber still has all of the Variable and Fixed Operational Responsibilities, and all the tasks under vehicle preparation and driving. The main attraction to subscribing is having access to different cars during the term of the subscription. But as companies that have begun to offer vehicles on subscription have found (e.g., Volvo and Cadillac), customers do not necessarily value multiple cars unless they can have them when a specific job needs to get done—right then and there—not one car for a year and another car for the next year.

Car sharing adds one big job that you don't have when you own your car: finding a car when you need it. In return, you skip having to perform most of the Fixed Operational and Ownership tasks and taking responsibility for the costs. Referring to the customer value equation, you give up quality and service in return for lower cost. If it's cost that floats your boat, then perhaps sharing is a way to obtain it. However, consider getting into a new vehicle every day and having to prepare that vehicle for driving. A tool to make that task automatic would be essential, and it would have to work flawlessly, otherwise every day would begin with irritation on top of the irritation of having to find the vehicle.



Advocates for self-driving cars look at all the jobs that need to be performed under the Drive task and see a major opportunity to decouple riders from driving. Put all of the Rules of the Road everywhere into a database and feed the robot driving the vehicle with this data whenever the car crosses a country boundary. The riders just sit back and enjoy the ride—until the vehicle runs into a problem it cannot solve. If one of the riders has to take over from the

robot chauffeur, he or she must be prepared to do it. The owners/riders of these cars will learn that they have hired a part-time chauffeur robot who takes a break from its duties when conditions don't suit it.

Be careful what you wish for

Sometimes, decoupling can lead to unintended and negative consequences. TESLA was among the first car manufacturers that separated purchasing a car from visiting a dealership. Surveys of car owners have for years identified the car purchasing experience at a dealer as very stressful, especially for those who feel they are unprepared for negotiating and making trade-offs to obtain the most car for the least money. What could be easier than sitting at a computer and choosing the model, interior and exterior finishes and the limited options, then choosing a financing alternative and pushing the enter button? Eliminating dealers also eliminates a large cost in the commission they receive. But the commission is mostly for what they are going to do rather than for just selling the car, as TESLA has discovered.

TESLA had to build its own network of workshops since its cars require special care and handling. It had to supplement its online sales with so-called 'showrooms' where people could kick the tires, take test drives and get help choosing the options. The personnel at these showrooms and workshops were enlisted to deliver the cars to customers and show them how everything from charging to over-the-air software and firmware downloading worked. All of these tasks are performed by traditional dealerships. TESLA has had a major problem delivering all of those pre-ordered Model 3s for which its customers have been waiting for over a year since its workshops are as rare as *Cebu Flowerpeckers* (one of the world's ten rarest birds).[6]

URGENT.LY and other companies that have introduced mobile apps that connect drivers in need of assistance to tow truck operators, have found that assistance comes in many forms. Their apps offer a tow, a change of tire, a tank fill-up. But OEMs that have provided their customers with warranty period roadside assistance have done so to get the cars to their own workshops. As part of the service, they sometimes offer free car rental, hotel stays and other types of assistance if the car owners are far from home. Companies that have engaged with the tow truck brokers have now either started their own call centers (e.g., Volvo Cars in the U.S.), or engaged other call centers to take better care of their customers. So the disrupters have been disrupted.

6. Hours after unveiling its newest car, the Model Y, Tesla was once again asking employees to help deliver cars ahead of the end of the first quarter.

According to an internal email sent on Friday from senior vice president Sanjay Shah to department heads at the company, a copy of which was seen by Business Insider, Tesla again sought employee volunteers from across the company to pitch in and deliver cars before the quarter ends this month.

"We need your help to make more progress in volunteer sign ups," Shah said in the email. "We have to deliver 30,000 more cars in next 15 days."

https://nordic.businessinsider.com/tesla-asks-employees-help-delivering-30000-cars-end-quarter-2019-3?r=US&IR=T

What's a car OEM to do?

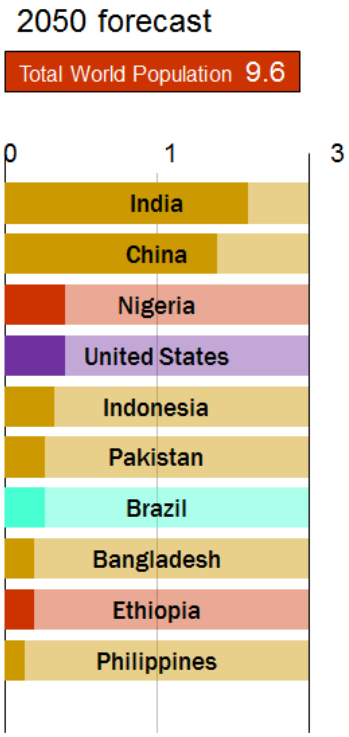
It seems that at the present moment, car OEMs are trying just about everything and anything, from selling bicycles to investing in battery technologies. Oddly, this is at a time when the passenger car has won the race, when over 90% of people do their travelling by car, not by bus or tram or bicycle or on foot. In the most populated countries in the world, China and India, people are still moving up the economic ladders and looking to get off their stinking motorbikes and into their own cars. The process has not even gotten started in Africa, where Nigeria will replace the United States as the third most populous country by 2050 (see sidebar).

But the climate for cars is changing as quickly as the climate in general. It is happening mostly in Europe and spreading to the East and West Coasts of the U.S. It's not a phase; as more people and their governments understand the implications of climate change, they will move toward travel alternatives that do much less harm than the vast majority of the vehicles on the roads today. Car OEMs need to take the lead, not wait to be legislated or shamed out of existence, or disrupted piece by piece. The OEMs need to provide every instance of car ownership with a modification that delivers more value to the customer and to the climate. This is the thinking that has been missing among the car OEMs to-date. They look at TESLA and think: We can sell our cars on the Internet as well. They look at TOYOTA and think: We can make hybrids too. GM tried giving their cars away in order to make money on parts, service and accessories. They went bankrupt, saved from destruction by U.S. government loans.

The Customer Value Triad will not change. Service, quality and cost are and will remain the basis of deciding whether a tool does the job that needs to be done for the particular person choosing and using the tool. The customer will decide if he needs it every day or intermittently, if she is willing to share it with others or wants it all to herself. The OEM needs to provide customer value in all instances, but particularly to those who buy or lease. Every single step needs to offer value. The key is to fit these three value criteria into the proper context. What works in one place does not necessarily work in another. This applies as well to countries within Europe and states in the U.S. as it does between Europe and Japan or China. Unless companies find a better way to make the necessary adaptations, they will cease to exist. Even great firms can fail, and the fact that a car company has managed to stay in business for a hundred years doesn't mean it will stay in business tomorrow.

"Solutions nearly always come from the direction you least expect, which means there's no point trying to look in that direction because it won't be coming from there."

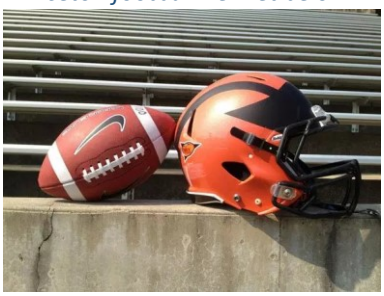
From ***The Salmon of Doubt: Hitchhiking the Galaxy One Last Time*** (2002), Random House, by Douglas Adams



The ten most populous countries, billions of people (Source: United Nations)

Dispatch Central: All the news that fits we print

People especially like the fact that you can buy a Smart in your school colors. Here is the Princeton model in orange and black with the tiger mascot's stripe as shown on the Princeton football helmet below.



Geely takes 50% stake in Smart

In February 2018, GEELY took a 9.69% stake in DAIMLER, making it the company's largest single shareholder. In October, GEELY and DAIMLER established a 50:50 joint venture in China for operating a platform-based taxis service. In late March, the two companies announced that GEELY will take one-half of the ownership in DAIMLER's *Smart* micro-car brand. Daimler and Geely will establish a joint venture based in China to further develop the *Smart* brand as a global electrical vehicle manufacturer. Apparently, the next generation of *Smart* electric models are already being manufactured in a new, purpose-built factory in China. Global sales of these vehicles will begin in 2022 and manufacturing of the car will be phased out from its current factories in Germany and France.

Smart has been somewhat of a problem child since 1994 when Micro Compact Car AG was founded as a joint venture between DAIMLER-BENZ AG and SCHWEIZERISCHE GESELLSCHAFT FÜR MIKROELEKTRONIK UND UHRRNINDUSTRIE AG (SMH). DAIMLER took 51% in the venture. The lead for SMH was Nicolas Hayek, better known as the man who started SWATCH. *Smart* is the name of the car and is an acronym for 'Swatch Mercedes ART'. DAIMLER bought out Hayek in 1997. In 1998, the company was renamed SMART GMBH.

It was reported recently in the FINANCIAL TIMES that the SMART division, which has an annual sales volume of only around 130,000 cars, has never made a profit and has been losing over one-half billion Euro per year. Dieter Zetsche, DAIMLER's CEO since January 2006, has held *Smart* under his arm. He was an original member of the MICRO COMPACT CAR supervisory board in 1994 when he was Chief Engineer, Development Division in the Passenger Car Business. Zetsche's replacement, Ola Kallenius, is reportedly not a fan of the little car.

A GEELY investment may save it from extinction. But there is still a hurdle that must be overcome: the venture must be approved by the German government. This may not be easy. As a result of GEELY becoming the major shareholder

in DAIMLER, a draft law was approved by the German Bundestag enabling the government to block investments larger than 15% by non-European Union companies in certain industries. The threshold is currently at 25%.

I know you wanted to go to Düsseldorf, but…..

WELCOME TO EDINBURGH. This is how passengers on a scheduled BRITISH AIRWAYS flight from London City Airport were greeted when they landed. The only problem was that all the passengers—and crew—on board believed they were headed to Düsseldorf, Germany. It's not like the two cities are in the same neighborhood or even the same country. It's about 500 kilometers due east from London to Düsseldorf, and about 600 kilometers due north to Edinburgh. BA says the flight had been redirected while it was in the air (Without telling the pilot and crew!?!). The airline said there was an "administrative mix-up". The pilot asked for a show of hands from the passengers in response to the question: Did you really want to go to Düsseldorf, or will Edinburgh do? Unsurprisingly, no one wanted to get off the plane.

BRITISH AIRWAYS said it did not understand how such a problem could happen. I will venture that the computer program that schedules flights and provides the route to the air traffic control system that registers flights received and processed an incorrect instruction, probably from another program. Since the pilot and co-pilot were not watching the instruments to see that the plane was flying east instead of north, and got all the way to Edinburgh before they realized the problem, the plane was on autopilot the entire time. This is a good segue into the next topic.

Computer program bug reason for Boeing crashes

IS ANYONE CONNECTING the dots between the two *Boeing 737 Max 8* airline crashes, planes being redirected in the air and self-driving cars? I have not seen any cautionary signs coming out of either the companies working with self-driving road transport vehicle solutions or from government oversight organizations. Concerning the BOEING crashes, the conclusion reached thus far, after analyzing all available data on both the ETHIOPIAN AIRLINES and LION AIR crashes, is that the problem was in the anti-stall device, known as the Maneuvering Characteristics Augmentation System (MCAS). This system automatically points the plane's nose down to stop it from stalling if, for some reason, the plane loses speed.[7] Software controlling the angle of the nose is informed by a sensor on the exterior of the aircraft. One sensor, and that is the problem.

Mis-reading the Tea Leaves

If you believe the articles you read in the popular press, including national newspapers, large circulation magazines and various other media, you are certain that the Millennials have purposely given up buying cars and houses, preferring to live in apartments in big cities and biking to work. There have been many serious studies following the living and buying habits of young adults in the U.S., and they all point to a single reason for more urban, car-less living: student debt. In the most recent survey, 73% stated that they have delayed big purchases for a home and car because of their debt.
https://www.bankrate.com/pdfs/pr/20190227-student-loan-survey.pdf

7. I do not have a pilot's license, but during one of my summer jobs I worked for someone who had an amateur pilot's license. He and I flew from Scranton to Harrisburg, PA and back in a PIPER CUB two-seater plane, and during the flight he had to practice a series of manoeuvers as part of continuing to keep his license. One of the manoeuvers was stalling the plane. He pulled the plane up so that it lost air speed so it stalled. The plane began to dive, picked up air speed and the engine started again.

BOEING is now planning to modify the MCAS system to make it easier for pilots to take over from the automated mode and override the anti-stall software. In addition, BOEING will add a second sensor so that if one of them returns faulty data, there will be another to serve as a check. Finally, BOEING will provide pilots with additional training on the MCAS system and its software, and the U.S. Federal Aviation Administration will make it mandatory for pilots to report alerts from the system that indicate there is a faulty sensor. So, the takeaways for self-driving cars:

- The driver must be prepared to take over when a sensor fault occurs.
- The driver must be trained to take the correct action.
- There must be redundant sensors and confirmation checks of the values being received from the sensors.

The upgrade must be approved by regulators, whose role has itself come under scrutiny for allegedly "doing safety on the cheap," as Senator Richard Blumenthal put it. The Senator from Connecticut is one of the too few voices of reason in the U.S. Congress who is urging caution with self-driving vehicles.

Tesla unlocked and stolen in two seconds

Researchers at Leuven University in Belgium have shown that it is possible to unlock a *Tesla Model S* and drive it away by simulating a wireless key fob. They claim to have gained access to a *Tesla Model S* in less than two seconds. The university researchers discovered that Tesla's key fobs use less than robust cryptographic and encryption standards. They used radio and PC equipment costing less than $600, read the signals from a TESLA key fob, cloned the key, opened the car and drove away.

According to the research team, the *Tesla Model S* key fobs send out an encrypted signal based on a cryptographic key to a vehicle's radio system in order to initiate the lock/unlock process. But the fobs, which are manufactured by a company called PEKTRON, use 40-bit ciphers to encrypt messages.[8] The researchers computed all possible keys for code pairs and created a 6 terabyte table. Once the codes were cloned from a nearby key fob using the radio kit, they were able to spoof keys in 1.6 seconds. Watch how they did it. (https://www.esat.kuleuven.be/cosic/fast-furious-and-insecure-passive-keyless-entry-and-start-in-modern-supercars/)

In other TESLA news, the company reported U.S. sales in March returned to earth from Mars. TESLA sold 9,000 cars in March, compared to 18,200 in February and 31,900 in January. That's still up

8. 40-bit encryption refers to a key size of forty bits, or five bytes, for symmetric encryption; this represents a relatively low level of security. A forty bit length corresponds to a total of 240 possible keys. Although this is a large number in human terms (about a trillion, nearly two hundred times the world's human population), it is possible to break this degree of encryption using a moderate amount of computing power in a brute-force at-tack, i.e., trying out each possible key in turn.

16.9% from March 2018, but it indicates that the *Model 3* bump is coming to a close and making the Musketeer's claim that the company will produce 500,000 cars this year look less than credible. Total sales for the year's first quarter were 63,000, compared to 90,966 for the fourth quarter of 2019. The company had a loss for the year's first quarter of $700 million. Ouch!

Amazon invests in Rivian (It's a car company)

HAVE YOU EVER heard of Normal, Illinois? (Photo of Main Street to the left.) I hadn't until I read about AMAZON making a $700 million investment in a car company I had never heard of named RIVIAN. Actually, I had seen RIVIAN mentioned a few times, but ignored it. An MIT graduate was building and electric pick-up truck. Call me when it's ready for sale, I thought. But when AMAZON talks, folks perk up their ears and listen. I looked up the company and found that it has its manufacturing headquarters in Normal, a town of around 52,000 (Scranton's got more residents!) situated in the middle of the state. I'm not sure if the 22,000 students at the University of Illinois, which also happens to be located in Normal, are included in that population statistic.

Robert "RJ" Scaringe, with a PhD in Mechanical Engineering, decided he wanted to go into the car business and founded MAINSTREAM MOTORS in 2009. He changed the name to AVERA and then RIVIAN in 2011. It started out based in Florida with the aim of building a 60 mpg (3.2 liters/100km) car, but moved its center of operations in 2013 to Michigan in order to be nearer to key suppliers. By this time it had also had decided that it was going to focus on developing electric vehicles, specifically a SUV and a pick-up. Normal is where MITSUBISHI MOTORS had a plant at one time, and RIVIAN purchased the building and its equipment for $16 million in 2016.

Grants and tax credits started arriving. At the end of 2017, SUMITOMO CORP. made a major investment. RIVIAN showed its first prototypes at the LA Auto Show in 2018, and announced that it would begin production in 2020. STANDARD CHARTERED BANK provided $200 million in debt financing and Saudi investment company ABDUL LATIF JAMEEL joined SUMITOMO to make the total amount of money raised by the middle of 2018 to $500 million.

So what does RIVIAN have that is of interest to AMAZON? Maybe it will use electric-powered vans for last mile deliveries in cities that

Hope After Brexit

Of Europe's five most valuable firms, three are based in Switzerland: Nestlé, Novartis and Roche. The fourth, Royal Dutch Shell is partly based in the U.K., and LVMH, a luxury goods firm, is French. Switzerland is not a member of the EU. It is a member of the European Free Trade Association (EFTA). It is the EU's third largest trading partner, after the U.S. and China. With 8.5 million people, it has 12% the number of the U.K. in an area 1/6th the size.

This is the SUV version of RIVIAN's first two models. I like the design. Looks like a good fishing car, and British Racing Green to boot.

Ford Steps In

On April 24th, Ford announced it would make a $500 million investment in Rivian after talks between GM and Rivian collapsed. Ford will develop BEV pickups based on the Rivian platform. This looks like one of the better moves Ford has made in quite some time.

do not allow emission-emitting vehicles. $700 million is spare change to AMAZON, and if an investment gives it access to good technology—which it appears that RIVIAN has—it's worth it to AMAZON to get in early.[9]

Normal, Illinois is where RIVIAN will begin production, and deliveries are due to start in late 2020. Its initial sales target is 50,000 vehicles a year to be sold in the U.S. Given the estimated sale price of around $90,000, that may be ambitious in the first years, but who knows. Scaringe says that RIVIAN will license the design of the underlying 'skateboard' platform to other manufacturers, providing the company with another revenue stream.

SoftBank and Nvidia part company

NVIDIA[10] says that it is working with 370 companies (according to its own web site) in the automotive industry to develop self-driving and driverless technologies that use its chips. But it was not NVIDIA's automotive activities that pushed up its share price to over $245 with its market cap approaching $200 billion, attracting a $4 billion investment by SOFTBANK in May 2017. It was the company's success in developing super-fast chips for cryptocurrency mining and gaming. Between 2013 and 2018, its revenues doubled from $4.3 billion to $9.7 billion, and its share price rose from $13.38/share to $245.75/share!!

NVIDIA's fortunes have fallen along with the stumbling of its two principal product areas. SOFTBANK sold its shares in February. The value of its shares at the sale were $3.6 billion. NVIDIA's market cap in April has recovered from a low of $72.8 billion in December 2018 and was $110 billion in mid-April 2019.

The company was founded in the early 1990s with a big idea. Its three co-founders believed that the future of computing would be graphics-based and that general-purpose computing would not be able to meet the demands of computationally challenging problems, such as those found in gaming. It appears that they got it right. Today, here's what NVIDIA says it is doing in the automotive sector: "Together (with our partners), we're integrating GPU (Graphics Processing Unit) technology and AI to transform deep learning, natural language processing, and gesture control technologies that will change how people drive—and empower vehicles to drive themselves."

In August, 2018, long-time customer, TESLA, decided to build its own super computing, self-driving chips. That still leaves 369 other customers.

9. The industry standard for electric vehicle battery cells is the 18650 lithium-ion cell that was first used in laptop battery packs and has since been scaled up for use in vehicles like the Tesla Model S.

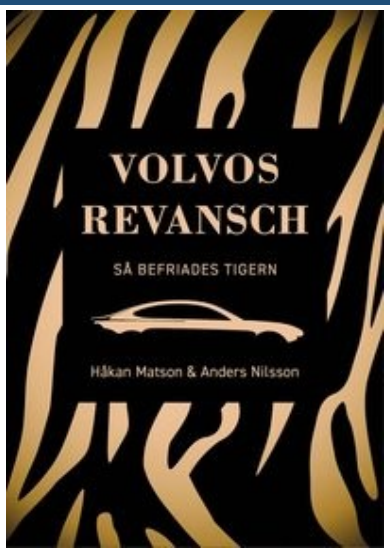
Rivian isn't using the 18650. It's using a cell design called the 2170, and even Tesla has moved to this cell with the Model 3. Rivian sources its cells from LG while Tesla's cells come from Panasonic. The 2170 is around 50 percent larger than the 18650 cell but can deliver almost twice the current.

When Rivian designed its packs, it looked for a more efficient way to cool its battery modules. If found that by using a metal chill plate between the rows of cells in a battery module, one chilling device could cool multiple rows of cells and cut down on the power use of more complicated chillers.

Rivian's battery pack is also housed in a unique structural shell made from carbon composite that reduces weight and is sealed to be completely waterproof. Once the pack is affixed to the Rivian's chassis, the vehicle gets an additional full-length skid plate designed to prevent the intrusion of foreign objects into the pack, a major plus for off-road vehicles. The first vehicles will be offered initially only with the largest battery pack, the 180 kilowatt-hour "Megapack."

10. The company initially had no name and the co-founders named all their files NV, as in "next version". The need to incorporate the company prompted the co-founders to review all words with those two letters, leading them to *invidia*, the Latin word for "envy".

Book Review: Volvo's Revenge



Håkan Matson (right below) was the Automotive Editor for Dagens Industri newspaper from April 2005 until January 2018, and Automotive Editor for Expressen from August 1984 until July 2001.

Anders Nilsson (left below) has been a journalist for Dagens Industri, Dagens Nyheter, Svenska Dagbladet, Expressen tha TV4. He has followed Volvo for four decades from both inside and outside.

THE BOOK'S SUBTITLE is *How the Tiger was Liberated*. Co-authors Matson and Nilsson, both journalists and authors, provide an account of the Swedish car maker during the period 2008 through 2018. This was around the end of the Ford ownership years and the eight first years under Chinese Geely. It is a narrative about how VOLVO CARS was on its last set of tires, having been driven into a ditch by FORD, how it was rescued by a little-known but determined Chinese businessman, Li Shufu, and how it got out of the ditch and back on the road where it achieved a level of success that few thought was possible when FORD sold VOLVO to GEELY in August, 2010.

For anyone who has ever worked for VOLVO CARS, FORD or GEELY, this is a 'must read'. For anyone who is working in the car industry today, there is much that can be learned about where the car industry is today and where it might be headed, so I would highly recommend it. The book is currently only available in Swedish, but I have asked the publishers whether it will be translated to English and when an English copy can be ordered. The answer to the first question is "Yes, the translation has started." There is as yet no publication date for the English version.

The authors' positions as Swedish automotive journalists provided them with unique opportunities to see the inside operations of VOLVO CARS during the past several decades. They have been able to interview executives and board members, test drive new models and be privy to presentations of company strategy as it has evolved. The fact that they have not worked for VOLVO means that their observations have a high level of objectivity. They are not trying to polish their own reputations or promote their own contributions. They are telling the story as they have witnessed it. At the same time, it is clear that they are pleased with how things are turning out for the home town favorite, and they are enthusiastic about handing out praise to those who they feel have earned it.

What are the book's main messages?

VOLVO's journey, from before FORD decided to sell it to the present day, is seen through the eyes of interested but detached onlookers. They relate how Li Shufu methodically

planned his eventual acquisition and how other forces within and around VOLVO tried to prevent it. The company's first two years under Stefan Jakoby are described, and make for interesting reading, particularly in comparison to how the company developed after Håkan Samuelsson took over.[11]

There are three main characters in the book: Li Shufu, the founder of GEELY; Håkan Samuelsson, the second CEO of VOLVO CARS following its purchase from FORD by GEELY; and, China. The authors describe how these three actors work together to provide the right combination of money, authorizations, management and inspirational leadership to take VOLVO from being a bit player in the big automotive league to being a title contender. Concerning the active participation of the Chinese government in Li Shufu's investments in VOLVO CARS, as well as AB VOLVO and DAIMLER AG, there has been speculation that it is the source of the money to Li Shufu. There is no proof of this claim, but the book provides an excellent rationale for why this is most probably the case.

A Rotary Club in my neighborhood recently organized an event in which Håkan Matson interviewed Håkan Samuelsson, clearly as a promotion of the book. "What's the secret behind VOLVO's success?" asked Matson. "Well-designed cars," replied Samuelsson. A major portion of the book is devoted to getting the flagship new XC90 model right. After slogans such as *Designed Around You* and *Designed by Sweden*, the latest is: *Protecting what's important to you*. VOLVO has returned to its safety roots. How the company has managed to do this while increasing the price and profitability of its vehicles are all discussed in detail in the book. They relate what it takes to design a safe, luxury car.

The story's not finished, of course. The last words are not written. VOLVO CARS had a record sales year in 2018, selling 642,253 cars. During the first quarter of this year sales are up in its the major markets: China (9%), Europe (4%) and the U.S. (10%) for a total of 161,320 cars for the quarter. This is in spite of the fact that car sales in general are down in all of these markets. If its first quarter rate holds, VOLVO will sell slightly more cars in 2019 than in 2018. It will not achieve the goal of 800,000 by 2020 set by Li Shufu for Håkan Samuellson when he took the reins. But as the authors explain, the Chinese do not set stretch goals so that the goals will be achieved; they set them in order to stretch the mind beyond where it would normally stop. One day, VOLVO may well sell 800,000 cars, or maybe a million or more. Whatever happens in the future, it has had a great ten years. This book expains why.

11. If there is one criticism I would make of the narrative it is the lack of space given to Jacques Nasser. When he took over as CEO of Ford on 1 January 1999, Ford was the most profitable automaker with a profit of $7.2 billion on sales of $163 billion. (It had $3.7 billion in profit on $160 billion in sales in 2018). Nasser told THE ECONOMIST at the time that he was going to take Ford from being a "boring old car maker to a consumer products and services company." In the same year he took over as CEO, he oversaw the acquisitions of VOLVO for $6.45 billion and LAND ROVER for $2.8 billion, and established the *Premier Automotive Group* in which JAGUAR, ASTON MARTIN and Ford's *Mercury* and *Lincoln* brands were also a part. It was Nasser who hired Wolfgang Reitzle and made him the head of PAG. It was Reitzle who kept Ford Telematics group from swallowing up VOLVO CAR's *Volvo On Call* program, which would have spelled the end of WIRELESSCAR and the entire concept of centralized connected car message handling. Nasser left Ford in October, 2001, and Reitzle departed in May, 2002. Bill Ford, Jr. took over as CEO of Ford and PAG withered on the vine. Ford (company and person) had no idea what to do with the brands that comprised PAG. Nasser did. Reitzle did. Who knows where they would be today if Jacques Nasser had not stepped on Bill Ford's grandmother's toes. But that's another story.

A Dispatcher's Musings: UX for User Experience

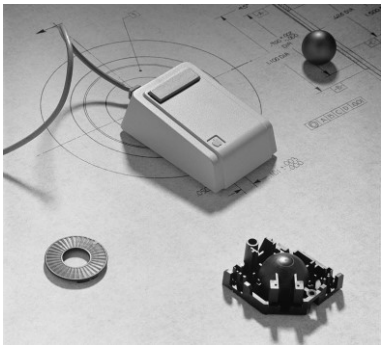
This Musings was inspired by an article in the March 2019 issue of THE ATLANTIC titled "Why Ford Hired a Furniture Maker as CEO", and also by what I was reading in the book Volvo's Revenge about how Volvo was transforming itself into a real luxury brand through design.

A ***user story*** is short, specific and goal-oriented. It is a one-sentence statement that tends to have the following structure: "As a <type of user>, I want <some goal> so that <some reason >. "

Let's try it: As a <bachelor living in an apartment in Boston> I want <a way of laundering and cleaning my clothes> so that <I don't have to buy a washing machine, an iron and an ironing board>. Presto, and the neighborhood laundromat and dry cleaning establishments were born, and then replaced by pick-up and delivery services.

IT'S FASHIONABLE THESE DAYS in business to talk about the **User eXperience**. UX is the acronym for it. Customer journeys and user stories are all the rage, and the vehicle industry is no exception. Bill Ford has bet the family farm on UX by hiring Jim Hackett, who knew nothing about designing, manufacturing and selling cars and trucks before he joined FORD in 2013, and it's not clear how much more he knew when he accepted the job as CEO in 2017. But he had established his reputation as a UX-expert while running STEELCASE, the office furnishings company located up the road from Detroit in Grand Rapids, Michigan. He was there for a total of thirty-three years, the last twenty as CEO.

A search on your engine of choice for "user experience design" will return the same basic definition: It is the process of enhancing user satisfaction with a product or service by improving the usability, accessibility and pleasure provided in the interaction with the product or service. It attempts to address all aspects of a product or service as perceived by users. The idea is to see a product or service from the standpoint of the eventual user/customer, not from the engineeer's, marketer's, sales or finance team's perspectives.



12. Apple commissioned Hovey-Kelley Design, which became IDEO, to assist its engineers in adapting the Xerox mouse to a device that could be built for a fraction of the cost and provide a better user experience. The actual designer of the mouse was Jim Yurchenco.

The term 'UX' originated in Silicon Valley in the early 1990s with a University of California at San Diego professor named Don Norman who wrote a book titled The Design of Everyday Things. Norman convinced John Sculley (who is best known for maneuvering Steve Jobs out of APPLE COMPUTER in 1985) of the need for a special group to look at how people use machines, and he also convinced Sculley that the group should be led by Norman with the title of *User Experience Architect*. (Just an aside, when Jobs came back to APPLE in 1997, he closed down Norman's design lab and fired Norman.) Another Silicon Valley UX designer, David M. Kelley, who also has a connection to APPLE,[12] became Jim Hackett's inspirational leader after

Hackett visited IDEO, the company started by Kelley, which he continues to run alongside his teaching job at Stanford University. STEELCASE bought a majority stake in IDEO, supposedly so that it could have full-time access to Kelley. IDEO helped to move STEELCASE from selling those open office cubicles that began to proliferate in the 1980s to developing open furniture solutions for team-oriented workspaces—where no one has a fixed space and people who are not in meetings try to find meeting rooms that are free where doors can be closed and they can work in peace and quiet.

A Steelcase 9000 Cubicle

Who else are we designing for if not human beings?

"One of the things that drew me to Jim was his commitment to design thinking, which puts the human being at the center of the equation," gushed Bill Ford to Jerry Useem, author of THE ATLANTIC article. I studied architecture and urban planning for seven years, and practiced my profession for five years after completing my university studies. What I learned about design during those years of studying and practicing as a design professional, and then as a process design consultant, is that it doesn't matter if the object of the design is a computer program, a building or an everyday utensil: there are just two ways to do it. The first way is to begin with a need expressed by people who will use or pay for whatever will be the result. Continue by studying the context in which the result will be used. Create a brief (a program of activities and their relationships) describing how the expressed need can be met within the context. Analyze different solutions and test them with the eventual users, financers, builders and context participants. Gain a consensus among everyone on the solution, make sure it can be built and then build it.

An architectural office in the pre-computer era, circa 1970. You dressed for work. No cubicles in sight. No coffee at the drafting board. Flexible hours: when you finished your drawing, you went home.

The second way is that someone has an idea of what an eventual object, such as a building, a chair, a tea pot or a car should look like when it is built. The person promotes it as art through the writing of manifestos. He or she finds patrons and convinces them to do all the work necessary to find the money to finance it, a place where it can be built and people to build it under the designer's careful supervision. When all the work is done, the patron organizes a party at, in or with the object, champagne flows and the designer is the guest of honor. I imagine there was a lot of champagne flowing at the opening of the museum pictured here.

The Weisman Art Museum in Minneapolis, Minnesota by Starchitect Frank Gehry.

There are professors, students and practitioners who fit into both camps. Some in the second camp, the so-called 'starchitects', are so highly attuned to their fellow humans that their creations are

often admired and appreciated by its eventual users. However, most of them, including in my opinion, Frank Gehry, who is most famous for his Guggenheim Museum in Bilbao, design what Robert Venturi calls 'ducks', buildings that have only a fleeting connection to what people are attempting to do in the building's spaces.[13] At the same time, there are some in the first camp who, in spite of their human-centric approach, can never deliver a solution that anyone likes. But erring on the side of designing for users has usually always produced a better result than designing for magazine spreads. You can probably guess in which camp I pitched my tent. I believe strongly that buildings (and chairs, teapots and cars) do not have to be works of art, but they should be artful works that work.

13. Venturi, Robert, et al. Learning from Los Vegas. MIT Press (1972)

What if the user wants nothing but an experience?

Jim Hackett personifies FORD's bet that the car industry can come out on top in the battle with the high techers, like Google, by, in his words, "…nailing the interaction between man and machine, not by producing the best chassis or software." This is in stark contrast to the story told in Volvo's Revenge, in which the authors' tale of VOLVO is one in which its future existence and that of its parent GEELY and all of the GEELY brands rests on getting the design of its cars right for their respective customers: luxury and highest safety for VOLVO, mass market for GEELY and right in between for LYNK & CO.

This is the *Fiat Multipla*. Someone actually designed it, and enough people approved its design to get it built. If any car was ever produced that looks like a duck, this is the one.

It's not one or the other. Just like a company cannot hope to stay in business if it designs cars like the *Multipla*, it cannot succeed if it doesn't provide for the basic creature comforts that the current generation of car buyers expect to find. As FORD's head of Global Product Development said about the findings of a workshop organized by Jim Hackett when Hackett was leading FORD's Smart Mobility subsidiary: As <drivers> people want <their stuff> so that <they can use their digital ecosphere>. (The <>s are added by me.) The question is whether people are more interested in <their stuff> than in the look and feel of the thing that is carrying them and their stuff around, or whether their criteria for a well-performing car is that it starts and stops when it should.

What is most fascinating about the Volvo's Revenge as told by the authors is how VOLVO was being suffocated by FORD's focus on cost control at the expense of everything else. This is the reason for the subtitle, *How the Tiger was Liberated*. VOLVO used the freedom afforded by its new owners by returning to what the company has always stood for: safety and Scandinavian design, simple,

understated and elegant. It allowed the designers and engineers do what they were trained to do, which is to produce cars that people want to buy and drive. So far, the strategy appears to be working, based on the increases in sales and profitability.[14]

14. See page 20.

The danger inherent in working from the user experience paradigm is that the goal might not be anything like what your company makes. For example: As a <non-specific human> I want <a user experience> so that <I can be liked>. This isn't so far-fetched in a world in which we seriously discuss what humans will do when all the work is done by robots. It's a far cry from: As a <high school student> I want <a college degree> so that <I can get a good job, buy a car, get married, have kids and live happily ever after>; or, As a <parent> I want <a car> so that <I can take myself and my family wherever and whenever we need to go>.

Winston Churchill in his Daimler

The owners and management of a car company who believe the number of people in the future who won't buy cars will largely outnumber those who will because people will have no reason to buy them might do well to try and develop 'user experiences' they can sell instead of cars. They can diversify into video games and become virtual reality producers, both with a focus on what it would be like to drive different types of cars in different types of places. They could offer epoch experiences, such as driving the first *Model T Ford* off the assembly line with the boss, Henry Ford, sitting in the passenger seat, or being the chauffeur for Winston Churchill when he rode through London in his DAIMLER after leading Great Britain to victory in WWII.

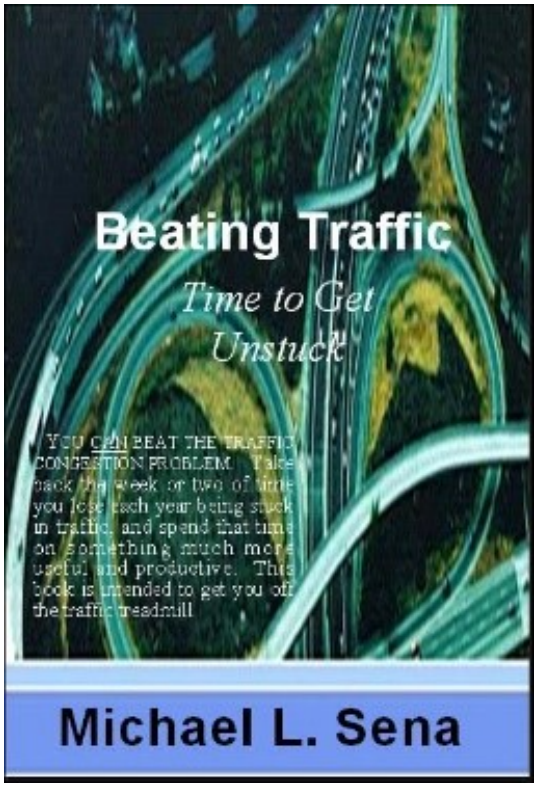
If, on the other hand, you want to stay in the car-making business because you are convinced that there will be more than enough people who want to buy cars in the foreseeable future, you need to keep the people in your organization and the people you hire to promote your cars (e.g., your ad agency) focused on the goal. It is to design and build the best car on the road (i.e., artful works that work, vehicles that are safe to drive, economical to operate, have as close to zero impact on the environment as technically possible, require a minimum of extra work to keep them operating, flexible in the kinds of jobs they can help the owner/driver/passenger to perform, etc.).

When it is clear that cars are no longer needed or wanted in places where you can sell them, then you can start to do what other companies do in similar situations. Close up shop.

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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