

Here comes the future ... something to ponder.

Being a car enthusiastic, a retired transportation and computer professional let me start with transportation, what we had in the past, what we have now and what we will possibly have in the future of which some are predictable and some are imaginations. If we are lucky enough we may see some but our next generations will see and enjoy.

Then and Now:

When we were a child we saw steam locomotives pulling passenger/freight rail cars, an automobile which required a handle or a push to start and an aero plane with prop engine. In time the steam locomotives were replaced by electric locomotives, a car with self starting and aero plane with jet engine. As the time goes by now we see each passenger/freight rail cars are self propelled by electric power moving at a lot faster speed as Bullet trains, and even faster as Maglev technology achieving almost 500 km/hr without any wheels but floating with magnetic force thru' a guide-way. The commercial aircrafts that used to fly only 200 mph are now flying at 600+ mph. The trains and planes are now flying with Auto-pilot mode controlled both locally and remotely by computers. Trains employ CBTC (Communications Based Train Control) and the planes employ ATCS (Air Traffic Control System). Similar technological improvements are happening to Automobile industry. Cars that used to run mostly with petroleum fuel are now gradually changing to natural gas and electricity and faster, stronger and safer. All transportation systems are getting safer with less maintenance because of usage of computers.

Today travelling say up to 400 miles between two big cities (downtown to downtown) takes the same amount of time for any transportation mode Air, Train and Cars considering travelling to and from Airports, Train stations and wait time and no speed limits and traffic jams for cars.

Tomorrow and Future:

Air transportation will even get faster with commercial use of supersonic planes within very near future and even faster with rocket propelled capsules. One will be able to go around the world in a few hours in next 10 years by supersonic planes and even faster in a matter of minutes using rocket propelled capsules.

World wide deployment of enhanced Maglev technology will make train travel faster, e.g. across US in 3-4 hours and across India in 1 hour within next 10 years.

Enhanced Automobile technology employing more and more computers will eliminate drivers, communications between cars and traffic signals and sensors will eliminate traffic congestions minimizing waits during travel making it a safer and tension free travel. It will also make better use of time during travel.

The World by time-line will get smaller. Travelling to other countries or continent will be for a cup of coffee. Most travelling possibly will involve other planets.

Consequences:

1. Auto repair shops will disappear...
 - A gas/diesel engine has 20,000 individual parts... An electrical motor has 20... Electric cars are sold with lifetime guarantees and are repaired only by dealers... It takes only 10 minutes to remove and replace an electric motor...
 - Faulty electric motors are NOT repaired in the dealership but are sent to a regional repair shop that repairs them with ROBOTS...
 - Your electric motor malfunction light goes on ... so you drive up to what looks like a car wash, and your car is towed through while you have a cup of coffee... Then your car comes out on the other side with a new electric motor or component...
2. Gas stations will go away...
 - Street corners will have meters that dispense electricity... Companies will install electrical recharging stations ... in fact; they've already started in the developed world...

Smart major auto manufacturers have already designated money to start building new plants that build ONLY electric cars...

3. The "Coal Industries" will go away...
4. Gasoline/oil companies will go away...
 - Drilling for oil will stop...
 - So say goodbye to OPEC...
 - The Middle East is in trouble...
 - And so is shipping industry that feed on oil transport.
5. Homes will produce and store more electrical energy during the day than they use... It will be sold back to "The Grid"... The Grid will store and dispense it, to the industries that are high electricity users. Has anybody seen the Tesla roof??
6. A baby of today will only see "personal cars" in museums. The FUTURE is approaching faster than most of us can even handle.
7. In 1998, Kodak had 170,000 employees and sold 85% of all photo paper worldwide... Within just a few years, their business model disappeared and they went bankrupt...Who would have thought of that ever happening?? What happened to Kodak and Polaroid will happen in a lot of industries in the next 5–10 years ... and most people don't even see it coming...Did most of us think in 1998 that 3 years later, we would never take pictures on film again? With today's smart-phones, who even has a camera these days?? Yet digital cameras were invented in 1975... The first ones only had 10,000 pixels but followed Moore's law... As with all exponential technologies, it was a disappointment in the beginning, before it became superior and mainstream in only a few short years.
8. Artificial Intelligence (AI): Computers become exponentially better in understanding the world... This year, a computer beat the best Golf-player in the world ... (10 years earlier than expected). A few years back Chess and Bridge games were captured by computers. It will now happen again (but much faster) with AI, health, autonomous and electric cars, education, 3D printing, agriculture and jobs. In 2030, computers will become more intelligent than humans...
9. Forget the book, "Future Shock," welcome to the 4th Industrial Revolution...
10. Software has disrupted and will continue to disrupt most traditional industries ... (in the next 5 to 10 years. With AI one day software will be able to write new software and possibly bug free eliminating all the software engineers and Robots will eliminate humans in most areas.
11. UBER is just a software tool (they don't own any cars), and are now the biggest taxi company in the world... (Ask any taxi driver if they saw that coming...)
12. AIR-BnB is now the biggest hotel company in the world ... (they don't own any properties)... Ask Hilton Hotels or the Marriott if they saw that coming...
13. In the USA, young lawyers already don't get jobs (because of IBM's WATSON) ... you can get legal advice within a few seconds so far the basic stuff ... with 90% accuracy compared with 70% accuracy when done by humans... So, if you're studying law, STOP IMMEDIATELY... There will be 90% fewer lawyers in the future, what a thought and only omniscient specialists will remain...
14. WATSON already helps nurses and doctors diagnose cancer ... it's 4 times more accurate and many times faster than human nurses...
15. Facebook now has face recognition' software that can recognize faces better than humans. In a very near future face recognition software will eliminate ID check eliminating a few jobs.
16. Autonomous cars: In 2018 the first self-driving cars were already here... In the next few years, the entire auto industry will start to be disrupted. Most of us will not want to own a car any more as we will call a car with our phone, it will show up at location and drive us to destination. No need to park it, we will pay only for the 'driven distance' and we can be productive while

travelling. The very young children of today will never get a driver's license and they will never own a car...

17. This will change our cities because we will need 90% to 95% fewer cars... We can transform former parking spaces into green city parks for a better environment.
18. About 1.2 million people die each year in car accidents (worldwide). That includes distracted or drunk drivers... We currently have one accident every 60,000 miles driven... However with autonomous driving that will drop to 1 accident in about 6 million miles... That will save a million plus lives, worldwide each year...
19. Most traditional car companies will doubtless become bankrupt... They will try the evolutionary approach and just build a better car ... while tech companies (Tesla, Apple, Google) will do the revolutionary approach and build a computer on wheels. Look at what Volvo is doing right now ... no more internal combustion engines in their vehicles starting this year with the 2020 models... They are using all-electric or hybrid only (with the intent of phasing out hybrid models in the not too distant future)... Many engineers from Volkswagen and Audi are completely terrified of Tesla... Look at all the companies offering all-electric vehicles... That was unheard of, only a few years ago...
20. Insurance companies will have massive trouble too ... because, without accidents, the costs of insurance will become cheaper... Their car insurance business model will disappear...
21. Real estate will change... Because if we will be able to work while in commute, or we can work from our home ... people will abandon their towers to move far away to more beautiful and affordable properties.
22. Electric cars will become the mainstream by about 2030... Cities will be less noisy because all new cars will run ONLY on electricity...
23. Cities will have much cleaner air...
24. Electricity will become incredibly cheap and clean, eventually free...
25. Solar production has been on an exponential curve for 30 years ... but we can now see the burgeoning impact ... and it's just starting to get ramped up...
26. Fossil energy companies are desperately trying to limit access to the grid ... to prevent competition from home solar installations ... but that simply cannot continue...
27. Technology will take care of that strategy in the not too distant future...
28. Health: The Tricorder X price will be announced this year... There are companies who will build a medical device called the "Tricorder" from Star Trek that works with your phone, which takes your retina scan, a sample of your blood, and then you breathe into it... It then analyzes 54 biomarkers that will identify nearly any disease... There are dozens of phone apps out there right now for health... This will eliminate doctors.
29. One day a tiny device will be installed by Robots in the body of a newborn. This device will monitor the body throughout its life and tell in advance of any illness and suggest preventive measure and medications (future form of medication will be software generated that will be downloaded to the installed device in the body) to avoid the illness providing sickness free life, it will also control the stress and anger for a healthy life. **Hope the baby making will remain traditional** to keep some fun and people busy. Food also will be provided via software.

As we can see computers will eliminate most of the jobs so what a human will do?? In future no need to go to school since there will not be any work other than for a handful of people. Meals, if required, will be delivered to individuals by the Govt. if any. Most likely our society will become free of wealth and money (virtual) and the world will become prior to civilization or come to an end??

WELCOME TO TOMORROW — to think, I used to complain about my parents and grandparents being "out of it."