

The New Electric Cars and Automotive Repairing by Future Auto Mechanics

Another opportunity to watch a career field being unintentionally reduced by a new technological advance.

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When people speak of the technology displacement of jobs, they speak in terms of someone designing a machine from the onset, to replace workers. However, often as not, it's technology developed for other purposes that inadvertently causes job displacement. That means there isn't some individual or small group who are striving to replace workers with machines, rather it's just an unforeseen consequence. We're seeing an example of that today . . . right before our eyes. If you haven't noticed, all the major automobile manufactures are rushing to design and build electric cars for us, the consumer. General Motors, Ford, Toyota have ongoing programs to manufacture and market both electric cars and small trucks for our personal transportation needs.



However, the UAW (United Auto Workers) is concerned that EVs (Electric Vehicles) will hurt the union because they require less manpower to assemble. In other words, fewer jobs! EVs are simpler machines having fewer mechanical parts, that are also smaller, lighter, but more importantly, they don't have reciprocating motion. Parts are not going back and forth, up and down at high speeds, the kind of motion that creates lots of wear and tear on machines. The petroleum fueled engines (internal combustion reciprocating engines) used in our modern cars, have a high failure rate compared to electric motors. Those engines also have a number of accessories attached, such as carburetors, fuel pump, oil pump, starter motor, water pump and distributor . . . all of which can fail and need replacing by an automotive mechanic. The engine itself can have hundreds of moving parts, each being worn down by the engine motion while running, each a possible source of failure. Same with the transmission that couples the engine's power to the wheels thereby pushing the car forward.

A whole industry has been created to repair automobiles, from supplying repair parts to actually fixing a broken car. I dare say, there is virtually no car owner that hasn't taken their car in for repairs. It's just part of living in a high technology society, and no one thinks anything of it, they just accept it as a fact of life. The more complex a machine, the more often it fails and needs repairs. But if electric cars are simpler than gas powered cars, requiring fewer people to manufacture, it stands to reason EVs will break down less often, now doesn't it? Of course! As EVs become more prevalent, with automakers like Ford and General Motors now intent on

making them prevalent, then auto mechanics can expect less work and therefore less money.

Lets face it- an electric car is a big battery, four electric motors and some electronic box to control those motors. You can't get much simpler than that! The conventional car engine/transmission/power train has a mirid of moving parts, all subject to wear and tear, and therefore breaking and failing. That's why everyone, over their lifetime, will periodically take their cars in for repairs. It's self evident that the more complex a machine, the more things that can go wrong (break), and conversely, the simpler the machine- the less repair required. True, one of those electric motors will fail, but since its motion isn't reciprocating, they will last longer. Furthermore, the motor is a modular component that will be replaced . . . just pull the wheel off, change the motor out, put the wheel back on and you're done. Indeed, it's likely to be a job most home mechanics can and will do.

Bottom line- the electric cars will put a lot of automobile mechanics out of work simply because there won't be the need for the number of mechanics America now has. And the thing is, no one intended to eliminate those mechanic jobs, it will just be the consequence of addressing the unrelated problems of energy and pollution. Jobs will also be lost in the supplying and selling of auto parts, all those auto parts stores you see along major streets.

The EV is a perfect example of how emergence of one technology, can inadvertently eliminate jobs in a related field, even though not intended to and often no one even thought of. There is no intent in eliminating auto mechanic jobs, no individual or small groups working to 'deep six' the auto mechanic. Very few people have even considered the impact on jobs that the EV will have. Even though the electric car won't displace all mechanics, it will create a surplus of qualified people, and that will cause their pay to drop so those working will find it harder to make a living.

This indirect job displacement is a growing phenomena, which will increasingly threaten the livelihood of both millennials and generation-Z as time marches on. Even more important is where several unrelated technologies come together to eliminate a job. As technology continues to grow exponentially, this form of displacement is becoming increasingly common. So much of the displacement of people is in fact, unintentional. The thing to know and remember is:

Today, no one is immune from technology displacement.

The electric car isn't the only technology that auto mechanics face. Since the nineties, cars have had integral computers designed into them, especially the engine and transmission. As those computers became more sophisticated and more involved in the operation of the car, they have been programmed to also diagnose automotive systems. Now when a customer comes into a repair shop, the mechanic plugs a small hand held computer into the car's computer, which allows the car to **TELL** the mechanic what is wrong. This means the repairman spends less time troubleshooting what is wrong, and so he can do the correct repair job right off. But any time you reduce the skill/intellectual levels required to do a job, you reduce the cost of labor because now there are more people who can do the job.

That's job displacement!