Projecting the Narrative

According to the current "news" in the world today, if we live another ten to twenty years we could expect…

Travel from New York to Shanghai in 30 minutes to make a business lunch. Then 30 minutes to London for an afternoon meeting. And another 30 minutes back home to make a workout trainer appointment at 5 PM. Jump on board Elon Musk's hyper speed jetliner.

And then, after Musk terraforms Mars, we'll be able to establish human colonies there. Gosh, he's good!

Based upon numerous forecasts, robots will have replaced a great deal, maybe most, of blue-collar workers.

Intelligent computer systems will have replaced most every information research and management job.

Artificial intelligence (AI) will have replaced most analytical and problem-solving jobs.

Not to worry, as governments will come out with Universal Basic Income (UBI) schemes that will allow us all to live wonderfully full "WALL-E lifestyles."

UBI will come from taxing robots, which means we will soon be raising corporate taxes since corporations own the robots.

We won't need to drive to a store or restaurant because Amazon will be providing all our consumable needs via driverless trucks and/or drones. Just tell Alexa what you want.

We are going to live to be much older than historical life expectancy because of new wonder drugs and replacement body parts. Those drugs and replacement parts will be designed by AI, then manufactured by robots, stored in robot-managed warehouses and delivered to us by Amazon's drones. UBI will make sure we can pay the bills until we die at an even riper old age than today.

All we'll need to do is stay inside our totally connected iHomes while enjoying the popular Virtual Reality channels of the day.

Sound pretty good? Or pretty far-fetched?

Let's go back to 2001, 17 years ago. Innovation in 2001?

Time magazine's November 2001 list of the best inventions that year included Ford's Think (electric) car, a fuel cell bicycle, a motorized surf board, a hydrogen powered scooter, an optical

driving bus, self-cleaning windows, a machine that mashes potatoes, wind-up cell phone, disposable cell phone, mini autonomous robots, a robot that could help out at construction sites as well as help granny at home, a robot that catches slugs in commercial vegetable farming, a heat generating jacket and even stink free shoes.

Kind of makes you nostalgic, eh?

Also in 2001, with great fanfare and a blizzard of publicity, Dean Kamen introduced his life-changing innovation, the Segway. For readers who were around and heard the pitch, Segway was going to totally change the nature of our mobility. Humans would no longer need to walk, or ride a bicycle or even use a car for many of our routine daily needs. All we needed was a Segway. The Segway was going to change the world. It did not.

There are great inventions like the Segway that in the end are just not practical, like most of those on *Time's* 2001 list. You can be assured a similar list exists today. What might we put on this list?

Ask most Millennials and they'll likely tell you autonomous vehicles (AVs) are not something to debate. To them the question isn't if but when. But let's consider some data...

There are about four million miles of roads in the United States. The American Road and Transportation Association figures it costs $2MM to $3MM a mile to build a two-lane rural road and $8MM to $10MM a mile to construct a four-lane road in urban areas.

So, the obvious question is…how much would it cost to upgrade those four million miles of roads to support ubiquitous AVs?

The simple answer is that we won't need to upgrade our roads because the cars will have all the technology. Oh, really?

"'Autonomous vehicles will have a significant and fundamental effect on cities and how they're laid out," suggested Mike Ableson, VP of global strategy at GM, on a panel at the 2018 Computer Electronics Show (CES) in Las Vegas. Ableson said much of his time is spent meeting with civic leaders about how to transform infrastructure to allow for autonomous cars.

So, these autonomous vehicle makers think the roads need to be "transformed" to accommodate their technology. Okay, let's go back to that question. How much will this transformation cost?

I don't know. Nobody knows, but it will likely cost a whole bunch of pretty pennies. Imagine tearing out, redesigning and rebuilding new freeways with all those needed sensors and gizmos. Just changing how urban areas are "laid out" probably costs more than $10MM a mile.

Since there is absolutely no way to estimate the cost, let's be optimistic and say it's "only" going to be $1MM a mile to add whatever sensors and gizmos are needed for the "significant and fundamental effect on cities and how they are laid out."

Four million miles at $1MM a mile equals $4 TRILLION. To put this in perspective, President Trump's $1.5 TRILLION ten-year infrastructure program seems to have hit the road with no legislative gas in the tank. If U.S. political leaders can't reach an agreement to spend $150B a year over ten years to upgrade our roads, where's the $4 TRILLION, or most likely a multiple of that, going to come from to "transform infrastructure to allow for autonomous cars"?

What about the value created by this ubiquitous AV dream?

Again, from a report at the January 2018 CES convention:

"One thing everyone agreed on is that autonomous technology has the potential to greatly improve road safety—and that's one of the reasons civic leaders are eager to adopt it. **'As I talk to mayors and city governments around the world, that's something everyone sees as a huge potential benefit. There are way too many people killed in car accidents, and that's something we can do something about,'** Ableson said."

There were 37,461 traffic fatalities in the U.S. in 2016. It would of course be great to prevent all those deaths.

But wait, according to *Medical News Today*, in 2016 there were 135,063 accidental deaths in the U.S. What about those other 100,000 people who died accidentally? How much should we spend to prevent them from dying? That's three times the number of traffic accident deaths. Do we need to budget three times $4 TRILLION to prevent those deaths?

Accidental deaths are not even the greatest cause of death in the U.S. The number one killer in the U.S. is heart disease (614,348) followed by cancer (591,699). Are not those deaths equally important as the traffic fatalities?

Resource allocation. That's not just an economic principle; it's also a common sense principle. There's only so much you can spend on things. A country already $20+ TRILLION in debt that struggles to raise $1.5 TRILLION to fix their roads, bridges and such over ten years hardly has the money to transform infrastructure to allow AVs to become ubiquitous.

What's happened to our society, where we have so many people infatuated with grand ideas that in the end are not even close to practical? It sure sounds like we're back to a Segway economy, where Silicon Valley technologists have projected a world that's more dream than reality. Did California even need to legalize pot? Hey Elon, don't bogart that joint!

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