

February 28, 2022

Transportation's great transformation



“Without discussing it with anyone first, he’d bought the band a self-drive ’27 Chevy van. The new law required vehicles to be auto-drive but had grandfathered in old models. It was an expensive hobby. Parts were harder and harder to find, and the cost of a self-drive insurance policy was stratospheric.”

This extract is from the recently-released sci-fi novel “Constance” by Matthew Fitzsimmons, set in the year 2038 when electric and self-driving cars are the norm rather than the exception. Through collaboration with a survivability engineer, Fitzsimmons provides a glimpse of how current technologies may be extrapolated into the future.

The auto industry has found itself at the intersection of two powerful and relentless forces: sustainability and digitalization.

From a sustainability perspective, the days of highly-polluting internal combustion engines (ICE) are numbered. Governments from Beijing to Washington have committed to stringent emissions targets, with Europe at the helm, seeking to become the first carbon-neutral continent by 2050. If these global and urgent ambitions are to be achieved, transportation and energy are the two key sectors which are overdue a massive overhaul.

According to the IEA, transport accounts for around one-fifth of global carbon dioxide (CO₂) emissions. Road travel accounts for around 75% of that figure and most of this comes from passenger vehicles (45%) and around one-third of it from trucks carrying freight.

BREAKING THE ICE

While there is no silver bullet solution, **electric vehicles** (EV) can and will help reduce the volume of fumes sent into the atmosphere as a result of transportation (the impact will be even greater if consumers opt for smaller EVs that weigh less).

To accelerate the shift, governments around the world are following a carrot-and-stick approach – offering subsidies (to consumers and manufacturers of EVs) while announcing higher taxes on petrol/diesel and plans to ban future sales of new vehicles with ICEs (major regions including the EU, the US and China will have phased-out conventional vehicles altogether as early as 2040).

Beyond regulation, economic forces are also now at play in driving EV adoption. The cost of EVs is on course to fall below that of equivalent ICE vehicles within five years thanks to advancements in battery technology. As more breakthroughs and economies of scale are reached, market penetration should accelerate further.

Already, global EV sales hit 6.75 million units in 2021; this figure is predicted to grow to 54,9 million in 2040. Here in Luxembourg, the number of new EV registrations almost doubled last year to 8,528, but still represents only 1.94% of registered cars. What we see is a market with huge growth potential – this will not only benefit car manufacturers, but companies that supply parts and services right across the supply chain.

COMMUTING ON AUTOPILOT?

In terms of digitalization, the auto sector looks poised to succumb to the wave of technological disruption that is rippling through almost every industry, changing ingrained habits and norms. For years, companies have been pouring millions of dollars into self-driving technology but there is still a lot of road to cover; the Autonomous Vehicles market size is projected to grow from \$1,366 million in 2021 to \$7,009 million in 2028, a CAGR of 26.3%.

Could it be that the end-state is an ecosystem of driverless cars that are aware of their surroundings and that can communicate with other vehicles? That is yet to be seen. It will depend on the level of autonomy accepted by law, infrastructure, technological developments, the strength of connection networks, consumer adoption and a whole host of other factors.

However, the potential benefits for consumers are far-reaching, including more free time (in 2019, Americans in 2019 spent 19 full working days a year stuck in traffic on their commute), fewer accidents (it is estimated that 94% of serious car accidents are due to human error) and

reduced need for parking in metropolitan areas (because driverless vehicles simply drop off their passengers and move on).

As such, it is reasonable to expect major steps in this direction and some strides have already been taken: In May 2021, German regulators granted nationwide approval for commercial robotaxi operations on selected routes at 30km/h, while the city of Chandler in Arizona, has changed its zoning laws to accommodate autonomous vehicles; developers will now be able to build properties with fewer parking spaces, so long as they provide suitable curbside passenger loading zones.

A LONG-TERM INVESTMENT THEME

To respond to the climate challenge, the mobility sector has no choice but to reinvent itself. Its new identity will also be forged by technological trends and the impending era of “smart” everything. As such, to imagine cities patrolled by electric, self-driving cars is more than speculative fiction. The structural themes of sustainability and digitalisation are poised to totally transform our notion of driving and for savvy investors, this represents opportunities; opportunities which bring about long-term focus and direction, beyond short-term market noise and volatility, and which transverse the boom and bust phases of the typical economic cycle. If you are interested in gaining access to this theme in your portfolio, please contact your BIL relationship manager.

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