

hanetf

Mobilizing the Fourth Industrial Revolution

Future Transport

2020



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Overview

The fourth industrial revolution is the current environment where disruptive technology trends such as the Internet of Things (IoT), Robotics, Artificial intelligence (AI), Future Cars/Autonomous Vehicles, Blockchain, Cloud Computing, Genomics and Social Media are changing the way we live and work.

Unlike previous industrial revolutions, these technologies are rapidly combining to create an accelerating, virtuous cycle of nearly unlimited disruption. While previous industrial revolutions were often localized, today is interconnected and global and its impact is already visible in homes and businesses across the world.

This is a short guide to help investors understand the main sectors of the fourth industrial revolution and their features, applications, and growth potential:

Robotics & Automation

Genomics

Future Transport

Social Media

Cloud Computing

Blockchain

Cyber Security

Augmented & Virtual Reality

Future Transportation

Horses were first domesticated around 6,000 BC and the wheel was invented sometime around 4,500 BC. Even though it took humanity nearly 1,500 years to create the first horse-drawn wheeled vehicle, we're now making huge developments in transportation technology that enable us to travel further and faster than ever before and in incredibly imaginative ways.

We already have e-scooters, personal submarines, functional jetpacks, wingsuits and electric planes; and sci-fi scenarios like self-driving cars, trucks and robo-taxis operating in smart cities may be coming to your neighbourhood in future.

Autonomous vehicles use artificial intelligence, software, RADAR and LIDAR technology to monitor a 360 range around the car to form a dynamic 3d picture of the environment. By combining sensors, software and controls, the vehicle can navigate, drive and respond to the actions of other road users without the need for human input.

Future transportation is a key theme of the fourth industrial revolution and encompasses a range of new technologies that are making it faster, cleaner, smarter and safer to move goods and people about.

The inter-connectedness of the fourth industrial revolution is well illustrated by advances in the future transportation sector. Along with the development of advanced battery technologies, advances in areas such as robotics (manufacturing of vehicles, autonomous driving systems) cloud computing (design, security, smart cities, driver assistance systems, mapping, AI, ride-share platforms and network connected services for transportation) and cyber security (prevent hacking of transport systems, theft of vehicles) are helping to push the industry forwards.

While electric and hybrid vehicles are the most visible indication of how rapidly new transportation technologies are being adopted, the industry is multi-faceted and includes manufacturers of hybrid, electric and autonomous (self-driving) cars, trucks, planes, boats, e-scooters and delivery drones, as well as battery and fuel cell producers, high speed and wireless charging technologies, raw material suppliers, sensor manufacturers and technology hardware and software providers.



In combination, these companies are helping to create a new transportation paradigm that is forcing change across industries and businesses— one where low polluting vehicles can safely navigate to a location with minimal human input, reducing or eliminating the need for human drivers, speeding up delivery and travel times, reducing congestion and lowering costs.

As the industry evolves, it has the potential to fundamentally reshape road usage and vehicle ownership; changing the way that urban spaces are conceived and how cities are designed. With the majority of the world now living in urban areas, new approaches to transportation’s effect on both humanity and industry have the potential to be massive and profound.

Hybrid & Electric Vehicles

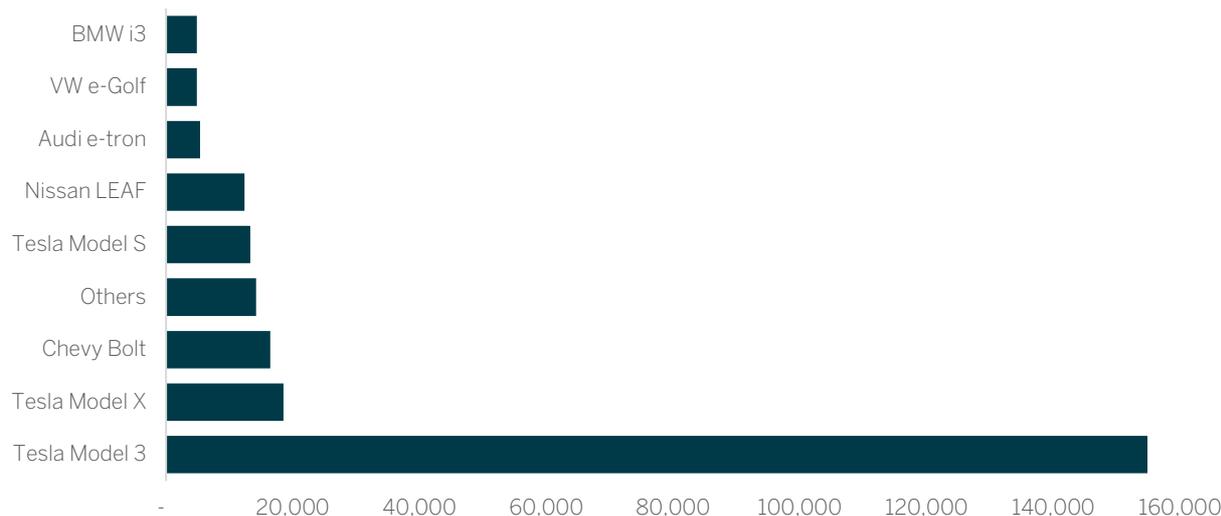
The investment opportunity of the electric and hybrid vehicle market is well illustrated by the fact that, by market cap, Tesla is the now the second largest car company in the world. With a market cap of 150Bn (20th May), Tesla is larger than General Motors (35.3Bn), Honda (43.5Bn) Ford (21.1Bn), Daimler (36.2Bn) and Harley Davidson (3.3Bn) combined. Only Toyota, at 195.5Bn is larger.¹

Overall, the global electric vehicle market is projected to reach \$802.81 billion by 2027, registering a CAGR of 22.6%², with continued growth in the sector spurred by developments in battery technology and the direction of government environmental and urban planning policies.

Cheaper and better-quality batteries are increasing use by auto companies and driving down the cost to the end consumer. The cost of Lithium batteries used in electric vehicles fell 87% from 2010 to 2019³ and new combinations of chemistry, design and technology mean the next generation of batteries will offer longer ranges, fewer and faster recharges, wireless recharging and increased output.

Lower cost batteries mean more car and truck manufacturers are creating electric and hybrid models – an estimated 500⁴ different electric vehicle models will be on the market by 2022, meaning more competition, lower prices, and broadened appeal across different consumer segments.

Top US EV car sales (2019)



Source: <https://cleantechnica.com/2018/02/04/big-auto-problem-us-electric-car-sales-report/>

¹ <https://markets.nytimes.com/research/markets/usmarkets/industry.asp?industry=53111>

² <https://www.alliedmarketresearch.com/electric-vehicle-market>

³ <https://about.bnef.com/blog/battery-pack-prices-fall-as-market-ramps-up-with-market-average-at-156-kwh-in-2019/>

⁴ <https://about.bnef.com/electric-vehicle-outlook/>



Governments are also imposing increasingly stringent environmental guidelines for vehicle manufacturers in a bid to combat emissions and meet CO2 targets and reduce congestion, further spurring the development and adoption of a wider range of electric and autonomous vehicles.

Electric taxis, buses, mopeds, scooters and bikes are already commonplace in many cities. Large fleets owned by delivery companies and couriers are incentivised to 'electrify' their fleet by the imposition of variable emission charges in urban areas.

Huge vehicle fleets owned by public transport operators are also electrifying. For example, London owner of Europe's largest electric bus fleet of 200 vehicles, plans to add a further 78 electric buses in 2020⁵. The city's entire fleet of 9,000 vehicles is planned to transition to hybrid or electric by 2037.

As cities seek to reduce congestion, many are looking at the feasibility of fleets of self-driving taxis and ride-sharing vehicles to replace private transport and free-up space previously used for on and off-street parking.

Market Growth & Summary

Electric and hybrid vehicles still represent only a small portion of the overall automotive market – about 2.7% of all sales in 2020⁶. Nonetheless, growth is significant, with sales surging from 450,000 vehicles in 2015 to 2.1 million in 2019. This growth trajectory is expected to continue with as many as 54 million vehicles, or 58% of the total market being electric or hybrid in the next 20 years⁷.

In 2019, Europe and Asia represented ~75% of the total electric and hybrid vehicle markets and are expected to be significant drivers of future demand.⁸

The market for autonomous vehicles is still in its infancy, with an estimated value of \$54.23 billion in 2019, it is projected to garner \$556.67 billion by 2026, registering a CAGR of 39.47%.⁹

Autonomous cars by 2030 could account for up to 15% of all passenger vehicles sold globally, according to Global Industry Analysts, Inc¹⁰.

As such, the future transportation sector is positioned to play a significant role in the future economy and is an attractive option for investors looking to enter an industry at an early stage of development.

Investing in the Future Transportation Theme

The growth potential, consumer interest and size of the addressable market of Future Transportation has spurred investor interest in this theme. Investors who see long-term opportunity can consider an allocation to The HAN-GINS Tech Megatrend Equal Weight UCITS ETF (ITEK). ITEK includes Future Transportation as part of 8 transformational technology trends that are reshaping the world alongside Robotics & AI, Cloud Computing & Big Data, Cyber Security, Genomics, Social Media, Blockchain, Augmented & Virtual Reality.

⁵ <https://www.intelligenttransport.com/transport-news/87086/the-london-electric-bus-fleet-is-the-largest-in-europe/>

⁶ <https://about.bnef.com/electric-vehicle-outlook/>

⁷ <https://about.bnef.com/electric-vehicle-outlook/>

⁸ <https://www.iea.org/reports/global-ev-outlook-2019>

⁹ <https://www.alliedmarketresearch.com/autonomous-vehicle-market>

¹⁰ <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/disruptive-trends-that-will-transform-the-auto-industry/de-de>



Fund Details

When you trade ETFs, your capital is at risk

EXCHANGE	BB CODE	RIC	ISIN	CURRENCY	INCOME
London Stock Exchange	ITEK LN	ITEK.L	IE00BDDRF700	USD	Acc
London Stock Exchange	ITEP LN	ITEP.L	IE00BDDRF700	GBP	Acc
Borsa Italiana	ITEK IM	ITEK.MI	IE00BDDRF700	EUR	Acc
XETRA	T3KE GY	T3KE.DE	DE000A2N5XE0	EUR	Acc
SIX	ITEK SW	ITEK.S	IE00BDDRF700	CHF	Acc

- [ITEK Factsheet](#)
- [ITEK Video](#)
- [ITEK Fund Page](#)

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HANetf's full products list includes:

Name	TER	Bloomberg Codes				
		LSE \$	LSE £	Borsa €	XETRA €	SIX
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HAN-GINS Tech Megatrend Equal Weight UCITS ETF	0.59%	ITEK LN	ITEP LN	ITEK IM	T3KE GY	ITEK SW
HAN-GINS Cloud Technology UCITS ETF	0.59%	SKYY LN	SKYP LN	SKYY IM	5XYE GY	SKYY SW
HAN-GINS Indxx Medical Innovation UCITS ETF	0.59%	WELL LN	WELP LN	WELL IM	W311 GY	WELL SW
KMEFIC FTSE Kuwait UCITS ETF	0.80%	KUW8 LN	KUWP LN	KUW8 IM	KUW8 GY	-
The Medical Cannabis & Wellness UCITS ETF	0.80%	CBDX LN	CBDP LN	-	CDSX GY	CBDX SW
The Royal Mint Physical Gold ETC	0.22%	RMAU LN	RMAP LN	-	RM8U GY	-
BTCetc Bitcoin Exchange Traded Crypto*	2.00%	-	-	-	BTCE GY	-

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