Neutromotive:
A disruption tale of the highest order

A provocation for the automotive industry

Fearlessly Frank ▶▶

Last month the Neutromotive transportation company achieved the highest market capitalization of any provider of personal transportation on the planet, eclipsing Tesla and way exceeding the feeble survival rattles from the former car industry.

How it achieved such status since it started in 2020 has become the substance of business school case studies – examined and pored over by MBA students entertaining dreams of being entrepreneurial billionaires.

It's a fascinating tale of a company willing to stare convention in the face - then turn around and walk in the opposite direction. Every aspect of the 2020s business model was upended in its quest to become the global platform for personal transportation. Yet the company insists this was the case not because it was wilfully capricious, but because it understood people were ready for something different, and that the world needed different business models.

Imperative Insight

Neutromotive relearned how to listen to customers, and built what they needed, not what they said they wanted. Harvard Business Review christened this process 'interpretative insight' – the generation of insights through understanding where customers will be in future, not what they say today. The company's skill at reading its market wasn't really listening to what those customers said they wanted through focus groups and social media memes – it was interpreting their lives and conversations and predicting what they would need to make their lives better. They heeded Henry Ford when he (allegedly) said "If I had asked people what they wanted, they would have said faster horses."

Simultaneously, Neutromotive realised that prevailing ideas of 'core business' needed to be overcome if they were to upset what was then known as the automotive industry.

Finding new ways

Their earliest definition of the business was not to be a car business, but to be a transportation business. Demand escalated for smaller, greener private transportation in a world increasingly fearful of viral contagion and climate change after the 2020 pandemic. Neutromotive spotted its opportunity. They saw that whatever happened in the world, people would always want to travel, to get from A to B. But those same people were thinking more carefully about how those journeys should be undertaken, and what were the consequences for the planet, the built environment, and their own well-being.

Neutromotive saw that the old ways of business were challenged as the world's economies began a Keynesian re-energising after the 2020 pandemic. As the global economy struggled to recover from the massive borrowings necessitated by the pandemic, and the 'softpower' of the USA dissolved following the ludicrous Trump cronyism fiasco and the lacklustre term of Joe Biden, the era of red-blooded capitalism was seen for all its failings. And with its demise, so too did business ideas built upon overtly chasing a manufacturing monopoly. New models for harnessing the power of markets were developed by businesses and governments everywhere. Those businesses that would succeed in the new economy would foster the imagination and creativity of the masses - as Apple had shown was possible with the invention of the Appstore - rather than attempt to monopolise human creativity.

Serving our latent ecological conscience

It all started with the simple insight that there was a nagging doubt in all of us that our commitment to fossil fuels was a problem, but we didn't know what to do.

Neutromotive's first move was to build an app that allowed us to 'score' our carbon use whenever we used or needed transport. In planning a route it would help us evaluate options so we could understand the pollution

contribution for each trip we took. Every time we jumped in the car to go to the supermarket, it would tell us whether it was cheaper to arrange home delivery, walk, or go by bicycle.

It was slow going initially – the app attracted a hardcore of high users while the majority simply shrugged. It flew completely under the radar of all the established players with a stake in getting us from A to B.

The power in data

However with sophisticated machine learning built over an ever growing database of travel information, users were soon recording their every trip, and evaluating their options before setting off. The app took into account traffic conditions, passengers, the weather, and the likely load you would need to carry. It eventually calculated your contribution by load utilisation when travelling by public transport. If you travel on an empty train, you are carbon-expensive. But travelling on a fuller train is more efficient. By providing the right information, transport providers found travellers smoothing out when they travelled as they balanced the need to be green with avoiding overcrowding. As time went by, Neutromotive built up more and more accurate and predictive data. Each of its users began to use the power of the data to optimize their contribution to the fossil fuel problem. They could see how their efforts reduced their personal carbon footprint as they took more and more considered decisions on how to travel.

Myopic competition

Airlines, train operators, bus companies, car and bicycle manufacturers ignored Neutromotive as a small irritant, not as a threat. And all the while the need to see a greener planet grew. The big players innovated incrementally. Cars became cleaner, consumed fewer tonnes of carbon in their manufacture, became easier to recycle. But they were still cars. Even the electric ones needed charging that was, for the most part, generated from fossil fuels. Traffic simply became worse as more and more pressure

built for segregated, safer means of transportation. But although progress was made, it was all incremental. People divided – the public transport–car-avoiding set versus those who chose the car. But it was an uneasy division with both sides acknowledging they'd use a better alternative if it existed.

The Workhorse deal

Then Neutromotive did a deal with Workhorse – a startup EV vehicle manufacturer creating light delivery vehicles for the 'last mile' delivery market. They would operate the digital infrastructure required in the trial Workhorse were running in Henley on Thames to direct all home deliveries to an accessible warehouse on the edge of town, from where they were delivered to homes in the area by the cleanest means possible. Inner-town deliveries were done by a combination of electrically assisted cargo bikes, while further out villages and larger loads were covered by the Workhorse vehicle – a cute, light, small and fun looking four wheeler.

Workhorse positioned themselves as the greenest 'last mile' possible, and dedicated their business to becoming carbon neutral, a goal they achieved after five years of innovation and development when they became fully dependent on their own CO_2-free 'hydrolyser' that generated sufficient green hydrogen to fuel their entire fleet and premises.

The hidden bonus

The trial was a huge success. Initially, it reduced the growth in delivery vans seen since the 2020 pandemic lockdown. Then people realized - prompted by their use of the Neutromotive app - that about half the local congestion and consequent pollution was caused by using their cars to complete frequent local errands.

The Workhorse business model then pulled its masterstroke. It introduced Workhorse Basket: with a promise to deliver anything bought from a shop

in Henley direct to your door. Rather than try to charge retailers for delivery, they learned from watching Amazon Prime: it was available for an annual subscription. Suddenly, shopping in Henley could be completed without the need for a car – all you needed was a Workhorse account and your purchases would arrive home when you decided. Deliveries could be made anywhere in the UK (creating outward traffic from the Workhorse warehouse) – and thus the Henley shopping experience began to draw people in from further afield. Town centre turnover rose, as shops turned their attention to displaying what they had for sale to better and better advantage, and people realized they could walk or cycle in, enjoy shopping, stop for something to eat, take in the river, and then walk or cycle home unencumbered. The shopping experience had been redesigned around the shopper, not the car. Town centre shops could take on the out-of-town superstores – the only real benefit of which was easy parking. Within three years, 80% of everything bought in Henley was delivered through Workhorse. Workhorse delivery people began to build relationships with the homes they served. The Workhorse EVs and bicycles became a distinctive presence around town and in the surrounding countryside. Local marketing emphasized that every EV seen on the road represented 10 fewer local car journeys…

An academic study conducted towards the end of the trial showed that the reduction in vehicle use in the town centre resulted in 1500 fewer tonnes of CO_2 being dumped in the atmosphere every year from cars alone. The disappearance of diesel delivery vans further reduced pollution by 900 tonnes per annum. Taken together, Henley had reduced its town centre pollution by 80%. Suddenly the world took notice.

That trial was seen by other towns – and soon the landgrab was on as Workhorse expanded and inevitably started attracting imitators as competitors.

Drive to innovate

Meanwhile the Neutromotive app kept reminding its users – now nearly 90% of the residents of the Henley catchment area – of their improvement in carbon consumption. But they also recognised that after the initial 'busy' period as more and more people actively used the app to understand their carbon transportation score and re-establish it at a lower level, they needed to introduce new functionality to take things to the next level.

Now that the town centre was largely traffic free, Neutromotive worked with Workhorse to introduce autonomous vehicles to collect from the shops for onward distribution. They used CommunityCar software to allow the Workhorse EVs to form small pelotons for the trip back to the warehouse and as they set off on their delivery rounds – a feature designed to save energy. Orderly columns of EVs soon became a familiar sight.

The break into personal transport

Then a local resident asked if she could buy a specially adapted Workhorse EV to take her to the station when she needed it. And thus Workhorse, augmented by the Neutromotive platform, moved into the provision of local personal transportation: some of it autonomous; some of it self-drive; some of it individual-owned; some of it rented.

It built on the success Workhorse had seen with home delivery – by using the Neutromotive app, residents used the new service to push down still further the carbon cost of their travels. Instead of large 4*4s clogging up the local station car parks, now they were full of single-person EVs – with two for every space hitherto taken up by a car. Of course the pattern of commuting had changed since the arrival of the 20s pandemics – now there was no regular 9 to 5 so trains had become quieter, and daytime trains slightly better utilized as people travelled to specific appointments when human contact was necessary.

Momentum behind Workhorse and Neutromotive had found its inflection

point. By now, the concept had taken over the whole of London, gradually being adopted by one town and borough after another. Competitors were forming who thought it would be easy to replicate. Neutromotive felt the time was right to raise substantial funds through a public listing to fund global expansion. Thus far, a succession of private equity deals had conferred a favourable valuation on the business but it simultaneously needed to expand across the whole of London, while at the same time begin to tackle other cities and countries around the world.

The consolidation of platfoms

Excitement built around the floatation, accelerating acceptance of the whole idea of using an app to manage personal transport requirements and reducing your carbon footprint. With the great digital diaspora of the early 21st century, Facebook had become the 'platform for social interaction'. Google had provided the 'platform for information'. Amazon had provided the 'platform for shopping'. Neutromotive was to be the platform for personal transport. This classification clarified the years when the cash-rich progeny of Silicon Valley all seemed to be competing for everything. It all clicked into place: for every major aspect of humanity's existence a digital platform had emerged. For efficiency's sake, there was only room for one – and previous anti-trust thinking regarded the granting of such a monopoly position to a single organisation a very bad idea. Legislation was sure to follow – and after a few false starts, governments finally found a successful formula that succeeded in curtailing egregious profiteering in favour of a sound, regulated business model. This required the platforms to accept that others could have easy access to suitably anonymised data if they wished – an idea founded with the adoption of the principles of 'open-banking' in the early 2020s. The subsequent legislation accelerated the adoption of new ideas by people the world over, rather than constrained it, and the open platform idea has driven Neutromotive to its current dominant position.

The flotation was oversubscribed and thus far, the shares have not slipped back at all. Simultaneously with the float, Neutromotive bought

out Workhorse, thus uniting the two businesses that had worked so well together to upset the personal transport market. But just as Apple owns iTunes and simultaneously provides a conduit for Spotify, Neutromotive kept its platform open to all. And thus it became omnipresent around the globe.

Revenues have continued their growth for Neutromotive. Individuals pay an annual subscription to have access to the app that helps them plan their travel. The data from Neutromotive is valuable to all transport providers and infrastructure planners. Neutromotive's software platform provides the third revenue stream. The last-mile delivery operations in Workhorse deliver the fourth source of revenue, while the hydrolyser invented by Workhorse adds a fifth. Finally, the Workhorse vehicle platform has become as ubiquitous as the iPhone in the 2020s. Six revenue streams, all growing nicely and all in profit makes for a healthy valuation.

Free market innovation

- It was in France that the road vehicle EV infrastructure added sharing to the Neutromotive platform. Owners of cars could share them at will with any other users – and when the trip was finished the autonomous EVs would find their own way home.

- In Los Angeles, Workhorses in 20-long pelotons were colloquially called 'Worms' and improved freeway efficiency by a factor of two.

- In London, struggling railway contractor Southern trains turned the Brighton to Victoria rail line into a road exclusively for Neutromotive directed autonomous vehicles. Pelotons of EVs were more fuel efficient than trains: they only became bigger when it was necessary. During light traffic periods traffic shrank but the road was accessible 24 hours a day. For 'conventional' passengers there were fleets of always-available EVs at every station, ready and waiting for when they arrived.

Neutromotive became the default provider of car autonomy software –

thus allowing even quite small EV manufacturing to spring up all over the world. Every time one sold, Neutromotive received a contribution. Today, 85% of all new vehicles come equipped with Neutromotive software, and 60% of all vehicles work through the Neutromotive platform.

The market for personal transportation became very distinct from the old, segregated markets for cars, trains and planes.

Summary

Customers simply wanted to get from A to B for the smallest carbon footprint. And it was that simple observation – today so obvious – that former incumbents of personal transport industries overlooked. Using the Neutromotive platform, everyone today has easy access to a digital platform that helps them achieve exactly that. Every week, we receive a report of the previous week's performance – including the environmental cost of the deliveries we have received. Being an open platform, all the main delivery businesses are linked to the Neutromotive platform, sharing activities and vying for the prestigious accolade awarded by Neutromotive of 'most responsible delivery service'.

In classic disrupter sense, Neutromotive was a disrupter by blindsiding the conventional players – and the old automotive industry has suffered the most. Locked into the mindset that it was there to sell cars, it failed to notice that its customers actually only wanted to get from A to B.

By the time they saw the power Neutromotive gave to people everywhere it was too late. Far fewer people were in need of a car at all, many were making them last far longer than previously since they were using them less. And Tesla and the electrification of the car sucked all the profit out of the industry. Decline became inevitable.

Of the big players, only BMW has survived at anything like the level it had enjoyed. It did so by embracing the ideas of open and shared development – designing modular vehicular platforms, drivetrains and motors (electric,

petrol, diesel and hydrogen) that independent makers could use to build the diversity of EVs we now see, while still conforming to safety regulations and being wholly compatible with the Neutromotive system. So underneath 75% of the vehicles on the road today, you will find BMW technology and manufacturing.

Carbon pollution due to personal transportation is today just 20% of what it was in 2020. And yet another industry has learned the harsh lesson of innovation myopia.

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