Changing behaviours to seek a better outcome for economies and societies

The Centre for Business in Society
White Paper Series

UNDERSTANDING DISRUPTION AND MANAGING FAST-CHANGING MARKETS: SUCCESSFUL STRATEGIES FOR THE AUTOMOTIVE SECTOR

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Disruption in markets poses threats and opportunities, requiring the re-thinking of strategies and new business models in response. Few markets have faced as much disruption as the automotive sector today. Whether connected, electric or autonomous vehicles, the pace of change is dramatic. New entrants are engaging in this sector, existing automotive players are striving to respond, while regulators and policy-makers are developing their viewpoints. But what of the consumers in this fast-evolving market? How receptive are they to these developments? Which consumers will modify their behaviours and which will resist? Do we understand why?

It will be very interesting to identify the emerging ‘winners’ and ‘losers’ between the more traditional players in automotive and the new-comers to this fast-changing sector, such as:

- Jaguar Land Rover or Toyota versus Tesla or Google’s Waymo
- GKN or Leah versus FEV or LG Chem
- Shell or Exxon versus EDF or Eon
- Petrolheads versus new-thinking consumers
- The Gulf’s oil versus Coventry’s EV batteries.

How these trade-offs and disruptive dynamics unfold will shape the future of the automotive sector, the mix of companies and partnerships involved, the products brought to market and their channels, as well as radically alter consumer purchasing and behaviours. This is the focus for this thought piece paper, which is part of a large body of research across the transport and automotive arena being undertaken by the Centre for Business in Society at Coventry Business School.
From robots emerging in every-day life to new uses of drones, increasing applications for virtual reality, social media networking, 24/7 mobile commerce, 3-D printing of components or body parts, break-through medical innovation, space travel... the possibilities for enticing new market developments are endless, all creating challenges and excitement for marketers and business strategists. However, a recent poll of thought leaders identified a more pedestrian and long-established sector as offering the biggest opportunities for change and with it presenting the most striking hurdles for understanding and instigating consumer adoption... the automotive sector.

Lying at the heart of the UK’s automotive design, manufacturing and racing heritage and alongside major global brands such as Aston Martin, Jaguar and Land Rover, black cab makers the London Taxi Company and the Motor Industry Research Association (now Horiba MIRA), it is not surprising that the city of Coventry has a long association with the motor industry. The Warwick Manufacturing Group at Warwick University and Coventry University’s Institute for Future Transport and Cities are significant parts of this growth, particularly in terms of electric vehicle development and lean supply management.

Today’s key drivers and pressures in the automotive sector include autonomy (driverless cars) and connectivity, cyber resilience, electrification and EVs, the greening economy, lean and innovative supply chain management, strategic global partnerships, disruptive innovation from new market entrants, and the business context of public policy directives and changes in the regulatory environment. In terms of understanding markets, developing aligned marketing strategies and executing such disruptive strategies in the face of very fast-moving market challenges, this sector presents an ideal focus for this research.

Existing automotive producers are fearful and are struggling to keep up with new entrants and challengers from other sectors, such as Tesla, Google and Amazon. New entrants are mindful of the powerful positions occupied by stalwarts such as Ford, VW and Toyota. At the heart of everyone’s concerns lies consumer resistance or inertia and the potential impact of legislation and regulation. Few other markets are encountering such game-changing dynamics and market forces.

The Sector’s Current Drivers

Recent workshops involving the leading players in this sector suggested the following as the primary driving forces for change and argued that their understanding is the essential foundation for creating successful business strategies:

- autonomy (driverless cars)
- connected cars, the IoT and cyber resilience
- emissions and electrification (EVs)
- the green economy
- lean and innovative supply chain management
- new materials
- 3D printing and plug and play components
- virtual reality (VR)
- in-vehicle information systems
- through-life costing and predictive analytics
- end-of-life disposal/re-use
- the digital economy and new routes to market
- greater C2C communication
- strategic global partnerships
- new entrants from outside automotive
- agile defence and security vehicles for urban settings
- new powerhouse economies and global market priorities
- tariffs and trade deals
- congestion and increasing drive-times
- congestion charging
- insurance policies/requirements
- health and safety requirements
- road use legislation
- SMART cities and traffic management
- personal transport solutions
- individualisation and personalisation

The biggest developments from this set were viewed by these experts as autonomy, connectivity and electrification. EVs are now familiar on our streets, but mainstream producers are announcing moves...
away from the combustion engine as they focus on EVs and hybrids, encouraged by governments and legislators in many major conurbations. Many cars are now live on-line and connected, sending and receiving information relating to traffic conditions, engine management and vehicle maintenance, web searches and mobile media use. This is only the start of where connectivity will lead, with vehicles increasingly connected to and communicating with each other and with SMART transport grids, remotely of their occupants. The first driverless autonomous production vehicles legally tested on public highways are currently on the streets of Coventry. Driverless pods, production cars, delivery vans and now HGVs are all in the early stages of market testing, soon to head to full-scale commercialisation.

However, not all consumers are prepared for these changes – which will radically impact on their usage of vehicles – or willing to trust the technologies under-pinning electrification, connectivity or autonomy. Battery range and recharging times worry drivers. Cyber resilience and security are concerns for increasing numbers of drivers whose vehicles now tend to rely on remote interventions and potentially are highly vulnerable to hacking. But it is autonomy – driverless vehicles – which presents truly radical innovation and disruptive change for those in the automotive industry, regulators and of course motorists, with many arguing that being driven by the car itself is a step too far, in terms of consumer acceptance, safety and legality.

**Autonomy/Driverless Vehicles**

The sales manager might desire to use his or her time on the move between sales calls working in a mobile office pod rather than focusing on driving a car; the gamer might want to spend the two hours from Birmingham to Heathrow playing games and connecting to other players remotely; the sports fan will enjoy Sky Sports broadcasts of matches while on the move; families will prepare whilst on their journeys for visits and vacations by researching local attractions and virtually exploring their impending destinations… prototype pods exist for all of these applications and usage behaviours. For drivers not desiring such a departure as offered by driverless pods, simply sitting in the driver’s seat but letting the vehicle make decisions and operate all controls might well appeal in the growing range of autonomous vehicles now being trialled. Both forms of driverless mobility are being developed: pods and conversions of mainstream car, van and HGV models.

There is also considerable interest in driverless vehicles and platforms within the defence and security communities, taking the latest developments from the automotive sector and applying them to hazardous situations in war, combatting terrorism and surveillance. There are already autonomous tractors harvesting fields and construction giants such as JCB and Caterpillar are bringing to market driverless vehicles for the construction and mining industries.

However, when will this new-thinking for production road cars and HGVs be deemed socially acceptable, legally safe and economically viable? And what of the many consumers who will be reluctant to adopt and indeed resistant to change, preferring instead to drive themselves as they do now? For manufacturers and brand managers, these potential market opportunities are fraught with worries and many dilemmas to ponder.

And where will it end? No more driving tests or requirements for ‘drivers’ to know how to drive? OAPs on the roads long after their faculties have declined in terms of their traditional motoring capabilities? All vehicles following each other on prescribed routes at identical speeds? Or will there be a much more complex set of market segments to cater for, with associated trade-off choices for the existing and new entrant manufacturers striving to serve this sector? Developing successful
marketing strategies in this market will be pivotal to the well-being of many businesses, many of which will undoubtedly struggle to remain viable.

For an explanation of autonomy see this clip from FIA: https://www.youtube.com/watch?v=HgF7E5q9sU4

Wired offers a good update of developments: https://www.wired.com/tag/autonomous-vehicles/

For a view of ongoing issues see this clip from The Guardian: https://www.theguardian.com/global/video/2017/mar/02/the-guardian-test-drives-a-driverless-car-it-doesnt-go-well-video

**EVs and Electrification**

The long-standing impediments restricting EV commercialisation have been price, range, battery life/cost, charging infrastructure and social acceptability. A niche of consumers with a conscience has existed for many decades, but in numbers too insignificant to warrant a roll-out of readily accessible charging infrastructure. The costs to acquire hybrids and EVs have proved a barrier to many consumers. Declining battery life and high replenishment costs add to these consumer concerns. Worries about being stranded and running out of battery charge compound these barriers to adoption. However, the biggest barrier to switching is inertia, with familiarity of the combustion engine and forecourt giving many consumers no ‘need’ to consider the latest alternatives.

EV and hybrid power options, offering cleaner air and less noise, are still much more expensive. The Nissan Leaf comes at a £10k premium, compared to cars of a similar size and demographic. Just as with the early stage home computers or large flat screen TVs, or with manufacturing robots and computer servers, new technology invariably comes at a price. It is usually only once a market has taken off that unit prices fall, enabled by rising customer purchases and driven by more competing suppliers entering the market.

There are companies, consumers and policy makers with a conscience who strive to ‘do the right thing’, but experience of researching EVs since their emergence in the 1990s is that there are too few such individuals and firms to make the difference or create viable target markets for manufacturers. Cost to acquire, ease of use and being fit for purpose, are the key consumer values which must be satisfied if a brand in this market is to succeed.

The finances currently are unattractive in terms of purchase price for EVs and other alternatives (although better when calculating running costs) and few governments have surpluses enabling the provision of hefty state subsidies. The functionality is not yet available to allow easy substitution of vehicles in a company’s operating fleet. Yet without mass adoption and falling prices, it will be a struggle to comply with the regulators or to improve environments.

Mass adoption in other markets has undoubtedly occurred once purchasing really started to take off and more consumers entered the market. In most instances, such a take-off has been triggered by the entry of a low-price game-changing competitor (remember the impact of Amstrad computers?),
or a new level of functionality surpassing existing technologies (such as a microwave oven), or a lifestyle changing innovative technology (as in first cell phones and now the smartphone).

In the case of diesel and petrol vehicles, the innovative alternative technology has existed for twenty years, but is still priced beyond reason in the minds of most consumers. So maybe our destiny lies in the hands of those brands and marketers who can commercialise new technologies as ‘must-have’ trend-setting desirable consumer gadgets and brands deemed essential to be seen owning?

The emergence of highly desirable EV and hybrid ‘gadgets’ from Tesla, BMW and JLR – rather than functional and sensible offerings such as the Prius or Leaf – might well be about to prove a game-changer, bringing to EVs consumers who buy for looks, trends and the badge of ownership, rather than a desire to save the planet. If this happens, sales are likely to accelerate dramatically, bringing a fall in retail prices as production volumes escalate.

Mass adoption of EVs for two decades has been blocked by the cost of acquisition, functionality limitations, resistant parties in channels to market, and resulting consumer inertia. Changing consumers’ behaviour and resulting infrastructure investment are required for there to be large scale product adoption. Ignoring the minority of ‘consumers with a conscience’ might have to be the necessary solution if producers are to prompt rapid take-off. Focusing on the EV as a desirable gadget, badge of honour and ‘must-have’ brand, is likely to bring about mass adoption and a step-change in sales in this fledgling market. Future success lies not in targeting only the sustainability segment. Arguably, gadgetising and premium branding will open up this market... Tesla, BMW, JLR, Maserati, Google, FIA are the new, trendier and more desirable ‘gadgets’ and must-have brands now transforming this sector.

If these really are the drivers for change, what are the implications for these emerging brands, for the traditional automotive OEMs, channels of distribution and policy-makers?

*Go Ultra Low* lobbies for EVs but offers some good insights for the uninitiated: [https://www.goultralow.com/#videos](https://www.goultralow.com/#videos)

*Tesla* is at the forefront of EV development: [https://www.youtube.com/watch?v=3SAxXUIre28](https://www.youtube.com/watch?v=3SAxXUIre28)

A view of the future: [https://www.youtube.com/watch?v=vod6TmjUVoo](https://www.youtube.com/watch?v=vod6TmjUVoo)

**Strategic Implications**

Disruptive and impactful innovation generally stems from technology break-throughs and new product developments. These are certainly driving change in this sector, but there are also significant other forces at play, including the fast-evolving competitive arena, radically altering consumer behaviour regarding purchasing options and consumption patterns, alongside a regulatory environment striving to keep pace with fast-moving policy choices. In terms of business strategy, there are implications for producers, consumers and those involved in facilitating consumption in this market.
Some of the headline issues in automotive from autonomy and electrification include:

**Manufacturers**
- How will existing players adapt and incorporate these technologies within their portfolios and dealer arrangements and when?
- Which new entrants and from which sectors will competition emerge?
- How will brands not recognised as vehicle producers establish credibility and create access to their products?
- Which companies will succeed and which will fail, against which critical success factors?

**Suppliers**
- Global supply chains have consolidated and leaned, but oriented around combustion engines for traditional vehicles produced by long-standing manufacturers, so which players will now demand what?
- Which producers – established, new entrant and those in adjacent markets – should suppliers support for long-term success?
- Where will production be based and for what products?
- How to supply new entrants without jeopardising existing supply relationships?

**Regulators and Policy Makers**
- What are the implications for policy and regulation from connectivity, electrification and autonomy?
- What are the real and perceived risks impacting these developments?
- Who should be relied on to determine standards and quality assurance?
- When is it appropriate to end trials and permit full commercialisation and roll-out?

**Consumers**
- What are the options opening up for consumers?
- How will consumers of these new products and experiences identify trusted sources of information?
- Which brands will be most appropriate and for which market segments/customer types?
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- Which consumers will be adopters and which will resist?

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How these trade-offs and disruptive dynamics unfold will shape the future of the automotive sector, the mix of companies and partnerships involved, the products brought to market and their channels, as well as radically alter consumer purchasing and behaviours.
The Centre for Business in Society

Through understanding the impact of organisations’ activities, behaviours and policies, our research seeks to promote responsibility and to change behaviours for the benefit of economies and societies.

The Centre for Business in Society (CBiS) is the main research hub for dedicated research staff and funded research projects in the Faculty of Business and Law at Coventry University. It is also home to half of the Faculty’s PhD community and its DBA programme. CBiS is a vibrant and collegiate research community, occupying dedicated space in the Faculty’s postgraduate and research building.

Our research teams are (a) examining sustainable production and ethical consumption, which underpin the new circular economy; (b) searching for durable and inclusive economic growth and development models, which promote new partnerships between state, economy and society; (c) exploring at the national, organisational and individual level the economic and social impacts of the financial crisis and post-financialisation, with a focus on responsible personal finance and debt; and (d) addressing the implications of the digital era and big data for business and society, notably regarding the strategy, use, privacy and security of data in organisations and society.

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Further information is available at:
http://www.coventry.ac.uk/research/areas-of-research/business-in-society/

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